


ANNUAL REPORT

OF THE

Medical College of Bengal.

THIRTEENTH YEAR. SESSION 1847-48.



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ANNUAL REPORT
OF THE
MEDICAL COLLEGE OF BENGAL.

THIRTEENTH YEAR. SESSION 1847-48.

UNDER THE IMMEDIATE CONTROL AND SUPERINTENDENCE OF THE
COUNCIL OF EDUCATION.

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MEDICAL COLLEGE OF BENGAL.

THIRTEENTH YEAR—SESSION 1847-48.

Under the immediate control and superintendence of the Council of Education.

President.

J. W. Colville, Esq.—*Advocate General.—(Officiating.)*

Members.

H. M. Elliot, Esq., C. S.—*Secretary to the Govt. of India, Foreign Dept.*
 C. Beadon, Esq., C. S.—*Offg. Secy. to the Board of Customs, Salt and Opium.*
 J. Grant, Esq.—*Senior Surgeon, Apothecary General.*
 J. Forsyth, Esq.—*Surgeon, Secretary Medical Board.*
 Russomoy Dutt, Esq.—*Commissioner Court of Requests.*
 Prosunno Coomar Tagore, Esq.—*Government Vakeel, Sudder Dewany.*

Member and Secretary.

Fred. J. Mouat, M. D.—*Assistant Surgeon, Bengal Army.*

COLLEGE COUNCIL.

H. H. Goodeve, Esq., M. D., F.R.C.S. J. Jackson, Esq., M. B., F.R.C.S. H. Walker, Esq. Fred. J. Mouat, Esq., M. D., F.R.C.S.,— <i>Member, Secretary and Treasurer.</i>		R. O'Shaughnessy, Esq., F.R.C.S. Allan Webb, Esq. H. Falconer, Esq., M. D., F.R.S.
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INSTRUCTIVE ESTABLISHMENT.

ENGLISH DEPARTMENT.

Professor of Anatomy and Physiology—H. Walker, Esq.
Professor of Descriptive and Surgical Anatomy, and Curator of the Museum—A. Webb, Esq.
Assistant Demonstrator of Anatomy—Dwarkanath Bose, M. R. C. S.
Lecturer on Chemistry and Practical Pharmacy—A. Robertson, Esq.
Professor of Botany—Dr. Falconer.
Professor of Medicine and Clinical Medicine—Dr. Jackson.
Professor of Surgery and Clinical Surgery—R. O'Shaughnessy, Esq.
Professor of Midwifery—Dr. Goodeve.
Professor of Materia Medica and Medical Jurisprudence—Dr. F. J. Mouat.

MEDICAL COLLEGE.

MILITARY CLASS.

Professor of Military Surgery—Allan Webb, Esq.

Superintendent and Teacher of Anatomy and Surgery—Pundit Madhusūden Gupta.

Teacher of Medicine and Materia Medica—Sub-Assistant Surgeon Sib Chunder Kurmokar.

MALE HOSPITAL.

Physician—Professor Jackson.

Surgeon—Professor R. O'Shaughnessy.

House Surgeon and Apothecary—Mr. George Daly, G. M. C. B.

FEMALE AND LYING-IN HOSPITAL.

Physician—Professor Goodeve.

Resident Surgeon—Sub-Assistant Surgeon Sussī Boshun Seal.

Goodeve Scholar—Nobin Chunder Bose.

OUT-DOOR DISPENSARY.

Superintendent—Mr. George Daly.

The following is a list of the pupils in the English class at the close of the session :

Stipendiary Students,	39
Robertson Scholar,	1
Free and Ceylon Students,	35
Subordinate Medical Department,	2
Total	77

Of the natives seven are Mahommedans, the remainder Hindus.

Of the latter there are	{	14 <i>Brahmins.</i>
		4 <i>Boidos.</i>
		16 <i>Coistos.</i>
		2 <i>Weavers.</i>
		1 <i>Barber.</i>

In the Military Class there are ninety-nine pupils upon the full pay of five rupees per mensem, and nine pupils from Assam, making in all one hundred and eight.

Of these ninety-two are Mahomedans, and sixteen Hindus.

Of the Hindu Students there are ...	{	2 <i>Brahmins.</i>
		10 <i>Chuttries.</i>
		4 <i>Kahars.</i>

Eighty of the pupils are natives of the North Western Provinces, and 28 of Bengal.

The following is a tabular statement of the attendance of the pupils of the Medical College, during the Session 1847-48.

CLASS.	Number of lectures given.	Number of students attending.	Total present at all the lectures during the session.	Ditto absent during the session.	Daily average.		REMARKS.
					Present.	Absent.	
Anatomy and Physiology, ... }	78	50	3,437	463	44.5	5.93	<p>The general attendance has not been quite so favorable as that of last year, but this has arisen entirely from the greater prevalence of sickness.</p> <p>In this table are included all absent from every cause—much of the absenteeism was the result of sickness, and some from private leave for the performance of religious ceremonies, &c. Among those marked absent again, some were too late to have their names inserted in the roll which is called at the commencement of every lecture.</p>
Demonstrations, ...	93	30	2,530	260	27.20	2.79	
Medicine,	70	45	2,979	171	42.55	2.44	
Surgery,	91	45	3,729	366	40.97	4.2	
Midwifery,	62	45	2,455	335	39.59	5.40	
Chemistry,	91	30	2,480	250	27.25	2.74	
Botany,	63	30	1,720	170	27.30	2.69	
Materia Medica, ...	94	45	3,978	252	42.31	2.68	
Med. Jurisprudence, ...	43	45	1,835	100	42.67	2.32	

The daily average attendance of the Military Class residing in the College was... .. 106

Bodies dissected in November 1847, 78

Statement of the number of bodies dissected.
 December " 137
 January 1848, 161
 February " 104
 March " 20

Total, 500

The cost of the Establishment from January to December 1847, was, 54,897 7 0

The charges of the Ceylon pupils,* 2,451 0 8

The Contingent charges for the same period were as follows:

Chemical Department, 77 8 3
 Museum and Dissecting Departments, 1,361 3 10
 Medical College ditto, 3,716 3 6
 Stipends to Students, 3,612 0 0
 Book allowance, 840 0 0
 Total, Co.'s Rs. 66,955 7 3

* Paid by the Government of Ceylon.

**Changes in the
Instructive Es-
tablishment.**

There have been several changes among the Professors during the past session.

In consequence of the recognition of the College by various Institutions in Europe, it became necessary permanently to separate the chairs of Anatomy and Midwifery, formerly held by Dr. Goodeve.

The services of Mr. Pearson having been transferred to another department, Mr. H. Walker, Surgeon to the late Governor General, and an officer of distinguished character and attainments, was appointed to the Professorship of Anatomy, upon a staff salary of 800 rupees per mensem, with a prohibition to engage in private practice.

The return of Dr. Goodeve from England, and resumption by him of the chair of Midwifery, has deprived the Institution of Dr. Stewart's services.

The office of Superintendent of the Botanic Garden and Professor of Botany in the Medical College, having been bestowed by the Honorable Court of Directors upon Dr. H. Falconer, that Officer's arrival caused the removal of Mr. McClelland, who had officiated in both capacities since the departure of Dr. Wallich.

Upon the vacation of their chairs by Mr. Pearson and Dr. Stewart, the Council of Education communicated to those gentlemen the high sense entertained of their zeal, ability, and efficiency, and directed that it should be placed on record in this report.

The unremitting exertions of the former officer were attended with injury to his health; and the state in which the Female and Lying-in-Hospital was left by Dr. Stewart, is in every sense excellent and creditable, both as the means of affording practical instruction to the pupils, and of gaining the confidence of the public in a department of medicine more opposed than any other to native prejudices and predilections.

The high and well earned reputation of Mr. McClelland as a zealous and successful cultivator of science, has been fully maintained by the able and excellent manner in which he has afforded instruction to the class of Botany. The course was completed and the public examinations of the session conducted by Mr. McClelland subsequent to Dr. Falconer's arrival, as it was not considered advisable or expedient for the latter gentleman to undertake a duty which was so near its termination, and which could scarcely have been accomplished with profit to the pupils by any Professor unacquainted with the exact nature and extent of the subjects already taught.

The following extracts from Dr. Goodeve's report for the **Dr. Goodeve's** first half of the year 1847, are published **report.** for general information :

1. " You will observe that the Indian Medical students continue to give great satisfaction to the Professors of the Institution in which they are studying, and I am happy to state that my own approbation of their character and private conduct continues unabated.

2. Since my last report in January, the annual class examinations at the College have been passed by these young men with the following satisfactory results :

Bholonath Bose,...	{	Gold Medal in Comparative Anatomy.
		Certificate in Surgery.
		Ditto in practice of Medicine.
Soorjie,	{	Ditto in Midwifery.
		Certificate in Anatomy.
		Ditto Physiology.
		Ditto Materia Medica.
Gopal,	{	Ditto Chemistry.
		Certificate in Surgery.
		Ditto Medicine.

3. It will be thus seen, as observed by Lord Brougham in his public address upon the occasion of distributing the prizes at University College on the 30th of April last, that the three Indian students have this year obtained nine honorable marks of distinction, independent of the Gold Medal gained by Bholonath Bose ; an amount of honor highly creditable to their talents and industry, when we regard the variety of subjects thus embraced in their studies, and the large number of students with whom they contended. Few of the English youths in the College were equally successful. Some of them it is true gained higher prizes in a single class, but with two exceptions amongst more than two hundred pupils no one gained distinctions in so many departments of their professional studies as my young friends.

4. I should mention in justice to Bholonath Bose, that I understand his gaining the Gold Medal in Comparative Anatomy and the Gold Medal in Botany, which he received on a former occasion, is the only instance on record since the foundation of the College of any one student obtaining such distinctions in two branches of study so very dissimilar, with the exception of my late lamented colleague (Bholanath's former preceptor) Mr. Griffith, the distinguished Naturalist and Professor of Botany in the Calcutta College, who, amongst other honors gained by him at University College, carried off the two prizes in question ; an example so worthily followed by his former pupil on this occasion.

5. Bholonath is now busily preparing for the final examination for the degree of M. B. at the London University in November, and he continues, in addition to his professional occupations, to pursue with great assiduity and advantage the study of Latin, a knowledge of this language being not only required in the examination in question, but much coveted by the young man himself.

6. Gopal is equally anxious to appear to advantage before the examiners for this degree ; he is paying some attention to Latin, but almost all his leisure time is most judiciously employed in practical study in the hospital, where subsequent to his clinical clerkship under Dr. Williams he has passed through the allotted period as a dresser under Mr. Liston, with great credit. He has been much engaged moreover for some

weeks in preparing for an examination lately instituted for the appointment of House Surgeon to the Hospital. On this occasion he was beaten by the only other candidate, the most distinguished young man at the University; but Gopal's examination was very creditable, and I think he has a fair chance of success on the next occasion a few months hence. It is an office of high responsibility and importance; of great service to the young man who holds it.

7. Soorjie continues the same career of industry, distinguished talent, and intelligence by which he has always been characterized. He will present himself for the first examination for the degree of M. B. in August, for which he is thoroughly prepared, as well as for the Diploma of the College of Surgeons, for which he will also be examined in a few months. He continues his classical studies with great zeal and profit, and at the same time keeps up the knowledge he has gained of the modern European languages. In the vacation, after the examination for his degree, he proposes once more to accompany his friend Dr. Grant to the continent to pursue the study of Natural History in Germany.

8. The moral character and general conduct of all three is unexceptionable, as it has always been, and their health is extremely good when they do not endanger it by over study and anxiety. They passed through the trying severity of last winter without the slightest inconvenience, and apparently enjoyed the climate at that season of the year far more than they do the warmer temperature of summer."

Report of the Dean of the Faculty of Medicine, University College, London.

Mr. Liston, the Dean of the Faculty of Medicine, reported:

"I have much pleasure in stating that the conduct and attention of Gopal Chandra Seal, Bholonath Bose, and Soorjo C. Chuekerbutty have been very satisfactory during the last six months of their attendance on the classes of the College."

The Council have much pleasure in publishing, without curtailment, Dr. Goodeve's final report to the Honorable Court of Directors:

"In continuation of my former reports upon the progress of the young men under my charge, I have the honor to state that they still conduct themselves with marked distinction in their professional studies, and to my entire satisfaction in regard to their general conduct, thus preserving to the last, the high character they have always borne in this country.

Dr. Goodeve's report for the last half of 1847.

Bholanath Bose and Gopal Chandra Seal on the first of this month presented themselves for their first examination for the M. B. degree at the London University, for which they have been most assiduously preparing since my last report. The result of this examination has been very satisfactory. Both are placed in the first division.

Since passing this examination, Bholanath Bose has also been permitted to pass the examination for the higher degree of M. D. This favor was accorded to him by the Senate of the London University in compliance with a memorial which I presented to that body, praying them to suspend on behalf of my pupils the rule which compels candidates for this degree to pass an additional year in hospital or general practice, after obtaining the grade of M. B. I requested this indulgence

on the ground of my pupils' inability to remain in this country during the prescribed period, or of returning at any future opportunity to England for the purpose, and on account of the practical experience they had already enjoyed. With respect to this, as in all similar applications I have had occasion to make to this enlightened body, it is my duty to acknowledge the exceeding courtesy and consideration I have ever received at their hands, as well as from all other public bodies with whom I have been officially brought in contact during our sojourn in Europe.

For the degree this young man has now obtained, besides the regular professional studies, it is requisite for the students to prepare themselves in logic and Latin, and to possess some knowledge of the French language, as part of the examination is directed to these subjects. Latin is also necessary for the degree of M. B., but in Gopal's case I obtained from the University an exemption in respect to this branch of study beyond a sufficient knowledge for the purpose of reading and writing prescriptions.

Bholonath was not desirous of escaping any portion of the customary tests, and being unoccupied with Hospital duties fully prepared himself on all points, passing upon every subject with the utmost credit. These extra professional studies formed a very onerous addition to his other exertions, but labor carried almost to a dangerous excess, enabled him to overcome the difficulty, in this as on all similar occasions, displaying that acuteness of intellect and extraordinary perseverance which have always rendered him conspicuous as a student, and which, combined with his extensive acquirements, promise a degree of eminence for the future, most gratifying to contemplate.

The principal reason for Gopal's wishing to avoid the necessity of employing much time to these studies, and consequently being unable to take the degree of Doctor of Medicine, was the fact which I have mentioned in my last report, of his having devoted himself for some months to practical studies in the College Hospital. Since writing that report he has become one of the resident house physicians; an office he obtained by passing a severe examination upon practical medicine, and the responsible duties of which he continues to fulfil most creditably. The M. B. degree is in fact quite sufficient for all practical purposes, it entitles the holder by courtesy to the appellation of Doctor, and the chief difficulties of the preparation and examination on all professional subjects for the degree, are those required for this grade.

These young men are now Members of the Royal College of Surgeons of England, both Bachelors, and one of them Doctor of Medicine of the London University, the highest professional degree which can be procured in Europe. They have obtained these distinctions not by favor or indulgence, but by severe labor, and by submission to those rigid tests of proficiency, which the highest scientific authorities have devised to regulate their studies, and by which they authorise the admission of candidates to the privilege of exercising the Medical profession. Thus, besides the ordinary diplomas, they have taken degrees which mainly on account of the high standard of the qualification required from the candidates, are sought by a very small portion of our English students. In addition to these satisfactory results of their labor, they have throughout the whole course of their previous studies distinguished themselves amongst their fellow students, by obtaining high honors in almost every class examination in which they have contended for prizes. Bholonath has been especially distinguished in this respect: besides many certificates,

he has obtained two Gold Medals and two Silver ones on different subjects, an amount of Collegiate honour rarely attained by the best English Medical students. They have moreover displayed a degree of zeal and energy in the acquisition of knowledge of every description, and above all have pursued a line of moral conduct, which has rendered them an object of praise and admiration to all who have had an opportunity of witnessing their career.

Having thus completed their professional studies, my principal anxiety now is to procure for my pupils a corresponding reward, as well for the great moral courage and enterprise they have displayed in coming to this country, in the face of all the powerful obstacles in the shape of national and religious prejudices, and the entreaties of relations and friends which opposed their undertaking, as for the distinguished career they have pursued since their arrival.

I have no doubt that some adequate provision will be made for them by the wonted liberality of the Government, and it would be most presumptuous in me to interfere in any way on this point. But I trust I may be permitted to express my anxious wish, that they may receive such employment as will call forth the exercise of their acquirements, and evince the approbation entertained of their conduct—at the same time that it will be sufficiently honorable to encourage their fellow countrymen hereafter to make similar endeavours to place themselves upon an equality with ourselves in mental acquirements and moral dignity.

I would beg most respectfully to urge upon the notice of the Government that the influence of this expedition upon the Natives of India and its effects as an example to others to pursue a similar course, will greatly depend upon the position which these young men may be permitted to occupy upon their return to Calcutta.

Soorjje Coomar Chuckerbutty passed the first examination for the degree of M. B. in August last, with much credit—he was placed in the first division, and subsequently obtained certificates of distinction in the examination for honors. At the conclusion of this ordeal he again accompanied his distinguished friend Professor Grant, to Germany, being absent about six weeks, visiting in his route Berlin, Prague, Breslaw, Munich, Frankfort, Bonn, the Hague, Leyden, Amsterdam, &c., and under direction of his able companion spent much time in examining the scientific Museums, works of art and other instruction to be met with in this interesting tour. With such admirable assistance and advice, combined with his own natural abilities and previous acquirements, he could not fail to profit exceedingly by this most useful mode of employing his vacation. He had already made considerable progress in the German language, and this opportunity enabled him greatly to improve his acquaintance with it. Since his return he has entered as a dresser to Mr. Liston, and is diligently occupied in the practical study of Surgery in the Hospital. At the expiration of his dressership he will become clinical clerk to one of the Physicians. He continues to deserve in every respect the high character I have always given him. He is only inferior in years to his companions, and he must alter materially his present career, if he does not ultimately become an ornament to his profession and his country.

It is my duty to mention with reference to this young man, that I understand he is about to embrace Christianity, and wishes shortly to be baptised. I have throughout my intercourse with the Native students strictly refrained from all interference upon these subjects, and

this change of religious opinion on Cluekerbutty's part is, I believe, purely spontaneous, the result of conviction upon enquiry into the merits of our faith. I conceive that similar occurrences will be the common result of familiar intercourse between Natives of India and Europeans.

The health of all continues excellent. According to the tenor of your letter of the 20th February last, the period of our sojourn in England will expire in April, but I am desirous to obtain the sanction of the Court to alter in some respects the present arrangements for our departure. I would beg respectfully to propose, that I be permitted to leave England in January next, with the young men who have lately taken their degree, thus anticipating by a few weeks the expiration of our present leave. I wish to make this slight alteration, because the period for our voyage to India and the season of our arrival there, will be exceedingly unfavorable if we leave Europe in April, and upon account of my own health as well as for the young men themselves, I am desirous to avoid this if possible. January is the latest month in which we could leave England with reference to this object. Moreover there is no great advantage to be gained by remaining longer. The young men have completely finished their professional studies, and are themselves desirous of returning to their families and friends in India, and of obtaining some profitable employment for the acquirements they possess.

Soorjie alone is not prepared to return, his studies are still unfinished on account of his age, and he cannot for the same reason take either of his degrees for some months. I am induced therefore once more to request the indulgence of the Court to permit this young man to remain another year in England, or at least until January 1849, which will enable him to take his Doctor's degree, and be placed upon the same footing with the others. I would again beg leave to urge the uninterrupted excellence of this young man's conduct, and the marked distinction of his collegiate career as strong claims to this favor, which he so greatly covets. Should the Court approve of this suggestion, I propose that he shall board with a family of his acquaintance, and the Secretary of University College, Mr. Atkinson, has kindly undertaken to superintend the official matters connected with the remainder of his studies in the college, and his general guidance. I will at the same time before our departure make all arrangements on this head so complete that these duties in reality will be very trifling. Soorjie is, however, now so far advanced in his studies, and so completely European in his habits and ideas, and is withal so steady, serious, and of such admirable moral conduct, that he could be safely trusted to the exercise of his own discretion and self-management during the remainder of his stay in Europe.

With respect to the pecuniary arrangements necessary to complete his education, £150 in addition to what has already been sanctioned for his use will amply suffice. The present state of my account with the Court on this head stands as follows:

Sanctioned by Government in your letter to me of the	
10th July 1845,	£ 600
Ditto on the 2d February 1847,	„ 180
	<hr/> 780
Received by me at various times,	„ 535
Balance due,	„ 245
Required to complete his studies,	„ 150
Total,	„ 395

This sum includes charges of every kind, the cost of Diplomas, the passage back to India, &c.

In order to save trouble and inconvenience to all parties, I would respectfully propose that the Court should sanction this money being paid to me upon my receipt before our departure (a portion of it is indeed already due to me,) and I will arrange with Mr. Atkinson, through my bankers, the regular disbursement of the requisite sums periodically required for the young man's support.

The time is now, therefore, rapidly approaching when my present duties must draw to a close, and in reviewing the progress of my pupils since their arrival here, I trust I may be acquitted of undue partiality in saying, that not only have these young men amply fulfilled the most ardent expectations of all who were interested in their courageous undertaking, but they have in every way surpassed our most sanguine wishes. The young men themselves are undoubtedly brilliant examples of what their countrymen are able to accomplish under favorable circumstances. It is impossible to exaggerate the benefits, whether regarded in a professional, intellectual, or moral point of view, which they have derived from their sojourn in this country; no amount of time or opportunity in India could have done so much for them as the three years they have now spent in Europe. But I would venture to suggest that it is not merely as isolated specimens of the Hindu character under the influence of civilization, that we must regard these young men, nor by their individual capacity for exertion; on their return home must the utility of their mission be measured.

We must look rather to the powerful effects upon civilization in India, which must be produced ultimately by the successful termination of this first expedition of Hindu youths to England itself, in search of European knowledge.

I have had many years practical experience of education in India as well as in England, and now that I am about finally to relinquish my connection with this most interesting occupation, I may perhaps be permitted to state, that I believe there is no step which has yet been taken towards the enlightenment of Asiatics, which is likely to produce such beneficial results in furtherance of that object, as measures which encourage Natives of the East to frequent the Schools of Europe for instruction, and to sojourn for a time amongst the inhabitants of our more civilized world. It is not the mere professional or scientific acquirements which can thus be obtained, though these are sufficiently important: it is the great social and moral influence which this association produces, which necessarily benefiting the individuals themselves in an incalculable degree,—through their spreading gradually amongst their countrymen, will, in the end, raise these nations to that higher standard of morality and religion, which it is so requisite they should substitute for their present degraded condition.

Permit me once more on behalf of my pupils and myself, to express our grateful acknowledgments for the kind indulgence and consideration we have so uniformly experienced at the hands of the Indian Government, both at home and abroad."

The following gratifying reply from Mr. Melvill, giving expression to the liberal opinions of the Hon'ble Court of Directors, completes the correspondence upon this interesting subject:

"I have laid before the Court of Directors of the East India Company your letter, dated as in the margin, forwarding a further report on the progress made in their studies by the Hindoo youths under your charge, also soliciting that you may be permitted to modify the arrangement sanctioned by the Court, so that the two elder pupils who concluded their studies by taking their degrees of B. M. (and one of them the higher degree of M. D.) may, in company with you, return in January instead of April next, to their native country, and the younger may continue for a further period of one year in this country for the prosecution of his studies, with which view you further solicit the additional grant of £150.

Your letter, moreover, expresses your anxiety that the young men may, on their return to India, "receive such employment as will call for the exercise of their acquirements and evince the approbation entertained of their conduct; at the same time that it will be sufficiently honorable to encourage their fellow countrymen hereafter to make similar endeavours to place themselves upon an equality with ourselves in mental acquirements and moral dignity."

I am directed in reply to inform you, that the Court can only repeat the expressions of satisfaction and approbation which your reports have, without exception, called forth. They sanction the grant of the * £780 sum of £150 in addition to that already advanced* to enable Soorjee Coomar Chuckerbutty to complete the course of study which he is prosecuting so successfully; leaving it to you to make such arrangements for his welfare after your departure, as the interest which you have evinced in your pupils will doubtless suggest.

On the subject of the future employment of these young men, the Court entirely acquiesce in the sentiments expressed in your report, and propose to communicate their views on the subject to the Government of India, leaving it to that Government to carry out their intentions in such way as may appear to that authority to be most suitable."

Since the receipt of the reports published above, Dr. Goodeve has arrived in India, and brought with him Drs. Bose and Seal.

The results now obtained the Council consider to be most creditable to all concerned, and in completing the records of an experiment which may fairly claim the distinction of forming one of the most important and interesting events in the history of Native Education, the Council desire to record their opinion that it reflects the highest honor on Dr. Goodeve, as well as on the successful graduates themselves, and the Institution in which they received the ground work of their professional education.

In July last, the Council of Education was directed to report upon the matters contained in the following extracts from a dispatch addressed to the Hon'ble Court of Directors by the Right Honorable Lord Hardinge, having reference to objections set forth by the Medical Board as to the

Extracts from Lord Hardinge's dispatch to the Hon'ble Court of Directors, regarding the efficiency of Sub-Assistant Surgeons educated in the Medical College.

incapacity and failure of Native Sub-Assistant Surgeons, subsequent to their being placed in charge of Government Dispensaries :

“ In the letter, paras : 26 to 31, I remarked upon the disparaging terms in which the Medical Board reported on the qualifications and professional value of Native Sub-Assistant Surgeons educated at the Calcutta College, and I stated at length my firm belief, that confidence, though perhaps slowly, will, in the end, be fully felt in their medical practice. To these remarks I may add, that the result of subsequent enquiries has convinced me of the correctness of the opinion I then expressed. In the neighbourhood of Jubbulpore and Saugor, and in the Nerbudda Territories generally, I am credibly informed that the Native population appreciate most highly the services of the Native Sub-Assistant Surgeons at the several dispensaries, and travel from remote parts of the district to have the benefit of their advice and treatment. Several applications have been received from Native chiefs, to be supplied with Sub-Assistant Surgeons.

“ In October last I proceeded with several members of my household, and accompanied by the Secretary to Government and his family and clerks, from Simla across the Hills to Hooshyarpore in the Jullundur Doab, and exposed to the accidents which so often happen on such journeys. Nearly a month was thus occupied, during which time I was satisfied to entrust the Medical charge of the party, with all the Native servants and followers, to the Native Doctor attached to my Head Quarters, who, as I before mentioned, is frequently called in by European gentlemen.

“ A copy of a letter No. 76, from the Medical Board, dated the 14th December 1844, is submitted herewith for reference, wherein, after some preliminary remarks, the Board observe, that Native Sub-Assistant Surgeons in charge of Government Charitable Dispensaries, have effected great good, and recommend their employment in such charges, and in the care of detached Native Jails ; and indeed, with regard to the medical treatment of European Officers and their families the Board hardly question the fitness of the Native Sub-Assistant Surgeons, although they have doubts as to their services being ‘ so much appreciated or liked as those of a European Medical Officer.’

“ If these opinions, so favorable to the qualification of the Sub-Assistant Surgeons given by the Medical Board in December 1844, be contrasted with the terms in which the Board speak of the same class of individuals on the 1st December 1846, the difference is indeed very remarkable. In the 7th para. of their letter No. 64, the following passage occurs:—‘ It is, we submit, not to be concluded, that a passed graduate ‘ furnished as he is with a Diploma, is equal as a matter of course to ‘ undertake independent medical charge, either at a jail, dispensary, ‘ or with a detachment. We are fully sensible that many of the graduates have displayed great proficiency in their scholastic studies, and ‘ have passed their examination with extraordinary success, but in ‘ general, their subsequent demonstration of utility, when practically ‘ employed, has not been commensurate with their early promise.’

“ These remarks, so condemnatory of one of our most valuable institutions for advancing the civilization of India, might be applied to any class of students in any profession in Europe ; amongst the cadets of the Military College, or of the Royal Academy at Woolwich, many young men pass admirable examinations for their commissions, who,

in after life, frequently disappoint the expectations formed of their ability in their youth. The same result occurs with those who have taken honors at Oxford and Cambridge, and I apprehend that, if an able Assistant Surgeon were placed at a Salt Chokee in Bengal, with two or three European patients on whom to exercise his professional skill, that he would at the end of 14 or 16 years' probation, when promoted to the rank of Surgeon, be no exception to the general rule applied by the Medical Board to Native Sub-Assistant Surgeons. This opinion of the Medical Board is fortified by two cases of incompetency of Sub-Assistant Surgeons employed at detached stations.

"The same objections, it is asserted, do not hold with the second class of students called Native Doctors. They are described by the Medical Board as being equal in practical qualifications to the Sub-Assistant Surgeons, the latter being taught in the College by European Professors of great acquirements for a period of four years, the former by a Native Surgeon in Hindoostanee, (I believe) for a period of two years; and yet the Medical Board come to this very remarkable conclusion, that the 2nd class student, as a Native Doctor, is more eligible than the student who ought to possess, and I am confident does possess, much higher qualifications. The Medical Board, however, follow up their assertion by recommending in para. 10 of their letter, that a third Native Doctor, in addition to two now with each Native Regiment, would be a most effectual arrangement. The introduction of Sub-Assistant Surgeons into Native Regiments, must be very gradual, as stated in my letter of last August; and their appropriation to other and more pressing duties, must first be provided for; but as the Medical Board give a comparative statement of the expense, and argue that the system of appointing a Sub-Assistant Surgeon to each Native Regiment will cost (1,02,000) one hundred and two thousand Rupees a year, whilst their recommendation of a third Native Doctor, will only cost (25,500) twenty-five thousand and five hundred Rupees a year, I must observe that, in the opinion of experienced Surgeons, competent to assist my judgment, the Medical Establishment of a Native Regiment would be more complete, if it consisted of one European Surgeon, one Sub-Assistant Surgeon, and one Native Doctor, instead of three Native Doctors, as now recommended by the Medical Board; the difference in the expence of adding one Sub-Assistant Surgeon, and reducing two Native Doctors being (25,500) twenty-five thousand and five hundred Rupees a year more if Sub-Assistant Surgeons were to be appointed to every Regiment, which cannot be accomplished for several years, affording ample time for the severest scrutiny, which the Medical Board, in the performance of their duty, may be disposed to exercise.

"I trust, however, that the Institution of the Medical College, now in its infancy, will, as it advances to maturity, overcome such objections as those recorded by the Medical Board on this occasion. It is the duty of the Government to encourage free discussion for the investigation of the truth; and however contradictory the opinions of the Medical Board may appear between December 1844 and December 1846, I am satisfied, your Hon'ble Court will not allow any adverse impression to be made on your minds, arising out of these opinions of the Medical Board, in depreciation of an Institution which is one of the most extraordinary and humane victories ever obtained over the prejudices of the Indian people, and one of the most honorable proofs of the constant solicitude of the East India Company for the amelioration of the Native population committed to its charge.

"The explanations afforded by the College Council on the result of the final examinations of 1845-46, appear to me to be most just, and I concur in the increase of pay recommended at page 7, of the printed Report for 1846-47, and also in the recommendation of the President in Council, in the concluding para. of the letter No. 680, 7th April 1847, as well as in the propriety of ascertaining their continued fitness by special committees, before the increase of pay be confirmed.

"This is in accordance with a letter of your Hon'ble Court, No. 103, dated 3d November 1845, in which, in the 13th para. you observe:— 'We concur in opinion with the Medical Board, that it is desirable to introduce in Bengal the regulation which obtains at Madras, for sub-jecting subordinate Medical Officers to a searching examination, previous to promotion in the Department.' On all these points, which are very proper subjects for investigation, I propose that they should be referred to the Council of Education, and it is my intention to request the President in Council to take the necessary steps to ascertain, whether, in the opinion of the Professors of the College and the Members of the Council, the Sub-Assistant Surgeons are incompetent to discharge the duties for which they are educated, as alleged by the Medical Board.

"It is further stated by the Deputy Governor, that although it may be hoped, that the Medical College will furnish Sub-Assistant Surgeons so well qualified for the charge of small stations, that there will be no cause to look elsewhere for men of this grade, yet there is no early prospect of such a supply; for there has been a gradual falling off in the numbers of Medical Students, as the inducements offered are insufficient to attract them, and the Deputy Governor is of opinion that, in order to render the Medical College useful as a certain source whence a yearly supply of well qualified Native Sub-Assistant Surgeons may be drawn, equal to the responsibility of independent charges, a prospect of higher emolument than is at present allowed, must be held out."

The matter was, in the first instance, referred to the College Council for report, and the statement of that body is subjoined:

"The College Council feel that it would be impossible for them to add any thing to the weight and eogency of the arguments employed by the Governor General in disproof of the disparaging remarks of the Medical Board in December 1846. In the sound practical wisdom and correct conclusions of Lord Hardinge, they fully and cordially coincide, and take the present opportunity of most respectfully and gratefully recording the deep obligations under which the Medical College and the Professors, whose reputations are so immediately and inseparably connected with its success or failure, are placed towards that nobleman.

"The following facts will, it is hoped, supply the means of testing the statements of the Medical Board, with the real circumstances connected with the career of the Sub-Assistant Surgeons educated in the Medical College.

"In December 1846, the Board write—

"It is, we submit, not to be concluded, that a passed graduate, furnished as he is with a Diploma, is equal, as a matter of course, to undertake independent medical charge, either at a jail, dispensary, or with a detachment. We are fully sensible that many of the graduates have

displayed great proficiency in their scholastic studies, and have passed their examination with extraordinary success, *but in general, their subsequent demonstration of utility, when practically employed, has not been commensurate with their early promise.*"

"On the 31st of the same month in the same year, the half yearly return of Sub-Assistant Surgeons educated at the Medical College, furnished by the Medical Board, and published in the Appendix to the Annual Report of the Council of Education, contains the following remarks in the column headed 'character and qualifications:'

1. Oma Churn Sett,.....	Very good.
2. Shama Churn Dutt,.....	Excellent.
3. Issur Chunder Gangooly,	{ Conduct good, active and desirous of improvement.
4. Ramnarain Doss,.....	
5. Jadub Chunder Sett,	Both good.
8. Rajkisto Chatterjee,	In every way excellent.
9. Rajkisto Chatterjee,	Very good.
10. Chimmun Lall,	Both good.
11. Nobin Chunder Paul,.....	Attentive and diligent.
12. Nilmoney Dutt,	Satisfactory.
16. Shama Churn Sirear,.....	Satisfactory.
17. Sado Churn Mullick,	Good.
19. Purma Nand Sett,	Attentive.
20. Mr. F. DeCruze,.....	Attentive and well qualified.
21. Inayut Hossein,	Attentive and intelligent.
24. Tara Chand Pyne,	Intelligent and very attentive.
25. Govind Chunder Doss,	Attentive and intelligent.
26. Purmessur Doss,	Good.
30. Dhurmodos Bose,.....	{ Very intelligent and well informed, and very attentive to his duties.
32. E. Lazarus,	
34. Wuzeer Khan,.....	Attentive and diligent.
	Ditto.
	Satisfactory.
Of the remainder no reports had been received, with two exceptions, that of	
28. Nubbokissore Gooptoo,	Remanded to his studies.
31. Mr. L. D'Souza,	{ Unfit for his present appointment.

"The former of these individuals was removed from his office in the Medical College, by the Council, as idle and ignorant: the latter was notorious as a student, for his idleness and extreme ignorance—his passing any examination at all being due to one of those fortunate accidents, by which an unqualified individual is liable to pass in any school and under any system of examination, however detailed and severe.

"Of the students educated in the College, who are practising on their own account in Bengal, the Council have reason to know that they are held in the highest estimation by their countrymen, and have generally proved zealous and successful practitioners.

"The failure of only two individuals out of so large a body of students, and those well known to have been the worst pupils in the institution, will, the Council believe, contrast favorably with the subsequent career in life of the same number of practitioners taken from any medical school in the whole world.

“The published reports of the Government Charitable Dispensaries exhibit the following catalogue of severe surgical operations performed by Sub-Assistant Surgeons, with their results:—

OPERATIONS.	No. of cases.	RESULT .	
		Cured.	Died.
Amputations,	47	38	9
Tumours removed,	55	53	2
Lithotomy,	181	168	13
Paracentesis Abdominis,	10	10	...
Extirpation of the Eye,	2	2	...
Medullary Sarcoma removed,	2	2	...
Hypertrophied Scrotum removed,	15	15	...
Sarcomatous breast,	3	3	...
Testicle removed,	4	4	...
Carcinoma of the lip and cheek removed,	1	1	...
	320	296	24

“This is independent of a multitude of minor operations, and thousands of successful medical cases, embracing the most formidable endemic and epidemic diseases of the country, as well as, in the private practice of the passed students settled in Calcutta, a gratifying amount of success in Midwifery—a department so opposed to the most deep-rooted prejudices of the people.

“Had the College during the twelve years of its existence, produced no other good than that exhibited in the preceding table, the Council would be content to rest the reputation of the Institution and its usefulness, upon the general impression produced by it on the public mind in India as well as in England. It has, however, in addition sent forth a large body of Native Doctors, in number one hundred and fifteen, who are believed to be more highly qualified than any of their predecessors in the same department of the public service; it has sent pupils to Europe, who were not by any means the most talented or proficient that the school contained at the time, and yet they have competed on equal terms and with a truly gratifying result, with the best students of the most distinguished Medical school in Great Britain; it has proved that the mind of the Native of India is fully equal to the acquisition of the most difficult and extended departments of practical science as taught in Europe; and the effects which its acknowledged success has already produced, lead the Council confidently to anticipate, that in proportion to the extension of its field of exertion, will be the measure of the efficiency with which it will be found ready to meet every public demand that may be made upon it.

“The College Council trust they will be pardoned for bringing to the notice of Government the published opinion of a distinguished member of the Hon’ble Court of Directors upon this subject.

“Colonel Sykes, in a recent number of the Statistical Journal, remarks that,

“It has been contemptuously said, and is still said, that in case the Company’s Government in India were swept away, not a monument of its existence would remain to attest its former state and power. No

doubt the Governments that have preceded the British in India have left sufficient proofs of their existence. The early Buddhist and Hindu authorities have indeed left prodigious monuments of their wealth, of their power, of their perseverance, and of their religious enthusiasm in their mighty cave-temples and vast religious edifices. The Mahomedans, too, have studded the land with their magnificent Mausolea, testifying rather to their pride than their piety. And what have the British done? I say we have raised greater and more lasting monuments than all these. One small extract from a report of a Native Sub-Assistant Surgeon shall justify my assertion: he says,

Delhie, August 1st, 1841.

“ ‘One boy about twelve years of age, who had been blind from cataract in both eyes from the age of two years, was operated on by couching and restored to sight.’

“I affirm that this faculty, given to a single native to perform the Godlike office of restoring the blind of his countrymen to sight, is a more glorious monument than all the works of art that human pride or human ambition have ever burthened the earth with; but when we find scores of such individuals endowed with such a faculty, and thousands, nay tens of thousands, possibly the recipients of the blessings they can confer; when we find the Medical Board of the Bengal Government reporting to Government on the 22nd August 1843:

“We have every reason to believe that the benevolent intention of Government in founding these Institutions has been fully realized—and we feel confident that future annual results will add to the intrinsic value of the Dispensaries, which are so well adapted by their internal economy to obtain the confidence of the native inhabitants.

“Many have had their sight restored—others have been cured of hydrocele, and relieved when in the last stage of dropsy. Several have also derived effectual relief from the successful operation for stone in the bladder. A few have been saved from a miserable death by the amputation of diseased members, and large tumours have been removed.

“Such operations could not have been achieved by native practitioners, without producing an impression on the minds of the most apathetic natives, and they must tend to spread far and wide the value of the Government Dispensaries—

“Then, I say, and with a thorough conviction of the truth of my assertion, in case the seeds of knowledge we have thus sown fructify to a general and luxuriant harvest, that we shall have left a monument with which those of Ashoka, Chundra Goopta, and Shah Jehan, or any other Indian potentate sink into insignificance; and their names shall fall on men's ears unheeded, while those of Auckland, as projector, and of Goodeve, Mouat, and others, as zealous promoters of scientific native Medical Education shall remain embalmed in the memory of a grateful Indian posterity.”

The Council are fully aware that some of the Sub-Assistant Surgeons, natives of Bengal, have not proved quite so successful in the North West as their contemporaries who are employed in their own province; but this result they submit is due to the peculiar genius, and strong local attachments of the Bengali—the growth of centuries—which can scarcely be overcome in the course of a few years, and for which no system of education, until it has acted upon several successive generations, can fairly be held accountable.

Those who are aware of the strong feelings of contempt and dislike entertained for Bengal and its inhabitants, by most of the natives of other parts of Hindustan, will readily understand how very slowly confidence, always a plant of slow growth under novel circumstances, is likely to be generated in the skill and ability of the passed students of the College.

The facts mentioned by the Governor General, founded upon his personal experience of what has already occurred in the Saugor and Nerbudda territories, prove that confidence has already progressed to an extent beyond the most sanguine expectations of the College Council, which they have learned with the most unfeigned and lively satisfaction.

The great defects of the College are, the want of an adequate amount of clinical instruction, the entire absence of the means of teaching compounding to the pupils, and the impossibility at present of affording accommodation within the walls to those native students, who would willingly remain day and night near their duties, and thus have opportunities of watching the treatment of disease with a degree of continuous attention, that is at present impracticable.

That these defects have operated injuriously, and still continue to diminish the practical usefulness of the Institution, have been so repeatedly urged and dwelt upon in the published reports of the Council, as to render any further reference to them unnecessary. The matter is in the hands of a Government which has ever been distinguished for the liberal manner in which it has supported the cause of humanity, and the defects will doubtless in due time be remedied.

In the mean time the Council trust they can fairly and conscientiously declare, that as a body, the graduates of the Medical College are perfectly equal to every duty they may be called upon to perform.

With respect to the remarks contained in the 10th paragraph of the Governor General's dispatch upon the declaration of the Medical Board, that "the Native Doctors are equal in practical acquirements to the Sub-Assistant Surgeons," the Council apprehend that there may possibly be some mistake in the matter, as the Medical Board must not only be aware that the Military students are educated entirely upon a lower standard, commensurate with the nature and extent of the duties they are called upon to perform, but that the genius and structure of their language, and the nearly total absence of text books (now, however, in the course of translation) renders it impossible to give them more than a plain and practical knowledge of the lower departments of their profession, such as well fits them for becoming excellent assistants, but does not profess in any degree to qualify them for independent practice, or for the higher duties and responsibilities of the Sub-Assistant Surgeon in charge of a Government Dispensary.

That the Military class under the admirable tuition of Pundit Madusudun Gupta has, within the last twelve months, made an extraordinary advance in, and acquired an intimate acquaintance with, practical Anatomy, is undoubted; but in Medicine, Surgery and Materia Medica, the only other subjects taught, their knowledge is necessarily of a much more limited character, from which all theories, minute details, and general views are excluded, until the complete series of text books now being prepared in Delhi, Lucknow, and Calcutta shall enable their teachers to enter upon them with some chance of being understood.

On the other hand, the Sub-Assistant Surgeon is not only taught Anatomy, Physiology, Chemistry, and Botany in accordance with and to the same extent as are required by the regulations of learned medical

corporations in Great Britain, but is in addition well trained in Medicine, Surgery, Midwifery, Materia Medica, and Medical Jurisprudence as contained in the writings and adopted in the practice of the most eminent and recent authorities in those departments of medicine, whose published works, indeed, are adopted as the text books of the classes. That they do acquire a respectable amount of such knowledge has been annually certified by the Government examiner and assessors, and some evidence of the same fact is afforded, by the replies published in the Appendix to the Medical College reports for the last two years.

Without wishing or intending in any way to detract from the undoubted usefulness and efficiency of the Native Doctor in his own sphere, the Council have once before had reason to deplore his having been preferred to the Sub-Assistant Surgeon in a manner that was not only injurious to the character of the Institution, but calculated to damp the zeal and ardour of the educated natives of Bengal in overcoming their natural and inherent prejudices, to an extent that might have been productive of the happiest consequences.

It occurred in 1842, when upon a requisition from the late Inspector-General Playfair in consequence of no Medical Officers being available at the time, four passed students of the English class—two of them Brahmins—volunteered to proceed in medical charge of transports to China, and to serve throughout the campaign. Their offer was rejected, and an opportunity lost that may not recur for years, which in its immediate influence would have been greater than even the voyage of the pupils who accompanied Dr. Goodeve to England, since the actual dangers of war were superadded to the dread of the sea, so firmly implanted in the mind of every Hindu.

Again, during the recent campaign on the Sutlej, before the prestige of terror attached to the Sikh name had been effaced from the minds of the natives of Bengal by the crowning victory of Sohraon, several of the native members of the English class volunteered their services as field assistants, and would have proved valuable and efficient aids had their knowledge and abilities been called into play.

The College Council fully and entirely, so far as their means of knowing the requirements of the public service extend, concur in the views of the Governor General respecting the advisability of attaching a Sub-Assistant Surgeon to every corps, in the manner suggested. Until the education of Native Doctors has been extended to an amount scarcely practicable while taught only through a Vernacular medium, the addition of a third individual of that class could never dispense with the presence of the European Medical Officer in a field hospital, or supply his place temporarily in the event of death, sickness, or absence from any unavoidable cause, especially in the field or at out-stations, where additional officers are procurable with great difficulty and considerable delay.

In times of peace, in large cantonments, and in ordinary states of sickness, the services of a Sub-Assistant Surgeon in a regimental capacity may not always be absolutely necessary, but the College Council believe that no department of the public service can be considered complete and efficient, which is not capable of meeting every demand likely to be made upon it in times of emergency.

The Council believe there is no other matter in the dispatch upon which they are required to report.

The foregoing report was transmitted to the Deputy Governor of Bengal, with the following communication from the Council of Education :

Remarks on the above by the Council of Education.

"We have now the honor to forward a report of the Council of the Medical College, prepared in obedience to the Governor General's desire, that the objections set forth in the Medical Board's letter to the Hon'ble the Deputy Governor of Bengal, No. 64, of the 1st December 1846, should receive from that body and from us any reply they might deserve.

But little remains for us to say on the subject, after the answer which the objections of the Medical Board have already received from the Governor General and from the College Council.

The words of the Medical Board are—"It is we submit not to be concluded, that a passed graduate, furnished as he is with a diploma, is equal, as a matter of course, to undertake independent medical charge, either at a jail, dispensary, or with a detachment. We are fully sensible that many of the graduates have displayed great proficiency in their scholastic studies, and have passed their examination with extraordinary success, *but in general, their subsequent demonstration of utility, when practically employed, has not been commensurate with their early promise.*"

This assertion is intended to be disparaging, and as far as we can judge from the Governor General's dispatch, to have the practical result of causing the substitution of two Native Doctors for one Sub-Assistant Surgeon in each Regiment.

But the College Council have shewn by an array of indisputable facts, that no assertion really disparaging could be made consistently with the truth of the case : any opinion of the merits of our Sub-Assistant Surgeons collected from those facts must necessarily be a highly favorable one.

The only mode, therefore, of stating an opinion, which should look disparaging, and at the same time should not be flagrantly at variance with the recorded facts to which it relates, was a recourse to the common rhetorical artifice of dwelling upon (as if it were a defect peculiar to this individual institution,) a defect which in the nature of things is attributable, in a greater or less degree, to every institution of the kind.

That this is the way in which the Medical Board have contrived to withhold from the Sub-Assistant Surgeons and the Professors of the Medical College, who educate them, the praise to which they are justly entitled, has been pointed out by the Governor-General with a force and fulness to which nothing can be added.

We have, therefore, merely to express our entire satisfaction in the evidence by which the College Council have proved, that any description by which the Sub-Assistant Surgeons as a body, and the College from which they issue can truly be characterized, must be an expression of strong commendation, and our entire concurrence in the Governor-General's opinion that the Medical Board have only been able to substitute censure for applause, by treating that which unfortunately is true of every place of education, as if it were the characteristic of the Medical College of Calcutta.

It is proper, however, to remark in this place that the Medical Board is a fluctuating body, inasmuch as each Member remains in it for only

five years, so that the opinions of the Board of one year may not be coincided in by its successors of the next. To shew that this has actually taken place, the Council deem it but just and fair to record, that the Medical College has received from the Board as at present constituted, a degree of support which has not always been accorded, and by which the efficiency of the College, and especially of its dissecting classes, has been greatly promoted.

Adverting to the Governor-General's wish that the most advisable system should be arranged on this subject by the Council of the Medical College and ourselves, we beg to observe that the principle of instituting periodical examinations to test proficiency and continued efficiency, has been advocated by us long since in regard to Sub-Assistant Surgeons, lest from being placed at out-stations removed from supervision and inspection, they should neglect their studies and that constant reference to standard works of authority which, in the Medical profession is considered so essential to prevent retrogression, or even complete oblivion of what has already been acquired. More recently, the same principle was prominently advocated in our plan for improving the condition of Sub-Assistant Surgeons, by advancing them after special periods of service to higher grades of salary."

Museum of Materia Medica. The absence of a proper collection of specimens in the Museum of Materia Medica was brought to the notice of Government, with a request that a complete and assorted cabinet might be obtained from the Apothecaries' Company through the Honorable Court of Directors, of drugs used in Europe, and means be taken to secure specimens of indigenous medicines in sufficient quantities to admit of their properties and uses being subjected to practical examination. Both requests were complied with, and the necessary instructions issued.

Vernacular Class Books. A Manual of Materia Medica and Pharmacy in Hindustani is under preparation by Dr. William Yates, and one of Anatomy by Dr. Mouat, is also in the press. The latter is to consist of seven parts, each complete in itself, and to be illustrated throughout by Mr. Grant, with marginal drawings containing numerical references to the structure exhibited. It will comprise a complete treatise on the general anatomy of the tissues,—translated from the last edition of Quain's Anatomy by Sharpey and R. Quain—the bones and ligaments, the muscular, vascular, and nervous systems, the organs of sense and voice, and the viscera of the thorax, abdomen, and pelvis.

The fifth part containing the brain and nervous system is ready, and the others will issue from the press as rapidly as can be accomplished under the many difficulties inseparable from such an undertaking in this country.

The third and fourth Fasciculi of Dr. Mouat's Atlas of Anatomy, containing the brain and nervous system with the

organs of sense and voice, were published during the past year: the concluding portion of the work is in the press, and will probably be completed within the next six months.

Mr. Daly, Superintendent of the Out-door Dispensary, furnished the following report of his department:

"During the past year there have been 40 students of the Military class employed at the Out-door Dispensary as compounders and dressers, for periods varying from two to four months according to the roster of duty. Of this number three have been discharged for misconduct and inattention, one became insane, and has been transferred to the Lunatic Asylum, and 22 have been permitted to go up for final examination as qualified for the public service: 14 have been remanded for another year, not having completed the prescribed period of study at the College.

The general conduct of these lads during the year has been, with a few exceptions, very satisfactory. In addition to the routine of duties detailed in last year's report, they have been kept in daily attendance in the wards of the Hospital during the visiting hours of the Professors of Surgery and Medicine, and had the clinical lectures of each duly explained to them. Advantage was also taken of every suitable occasion to direct their attention to the symptoms and treatment of every remarkable case in Hospital.

All the minor surgical operations at the Out-door Dispensary have been performed by them under my own immediate superintendence, and a reference to the return will shew that they have been sufficiently numerous and varied, to afford the class a very fair amount of practical instruction."

In consequence of the great difficulty of procuring qualified Native Doctors to serve in the province of Arracan, it was suggested by the Medical Board that some Natives of the province should be specially educated at the Medical College for employment in the hospitals of their native country. Upon this proposal the following report was submitted to Government by Major A. Bogle, Commissioner of Arracan:

"I beg to observe that this is a plan which I have long had much at heart, and that there are now two young men at the Medical College, one of whom was placed there by me through Dr. Mouat's kindness, nearly two years ago, and the other very recently—and I would long since have increased the number could I have induced more to go so far from their homes as Calcutta for any length of time, but they generally object to a protracted absence.

"I am now of opinion that it is most desirable to endeavour to follow out the plan proposed by the Medical Board, and since the receipt of Mr. Grey's letter, I have been searching for youths, who may be inclined to proceed to the Presidency and study at the College, but as yet, even with Government support, I have only been able to hear of three, and for their subsistence some arrangement must first of all be made.

"One great difficulty is now to find lads who can read and write Hindostanee sufficiently well to qualify them for admission to the Native Medical class, although there is no scarcity of those who can speak it; and it was in a great measure with a view to the qualifying of youths of Arracan for entrance at the Medical College, as well as to open to them very many other advantages, that I have always advocated the maintenance of an Oordoo class in our Provincial Schools, from whence students wishing to proceed to Calcutta might be draughted. The length of time which Natives of this province must remain at the Presidency to qualify them for the medical profession is, as I have already noticed, a great obstacle to their going so far away. If to this time is added that which must be devoted to the study of Oordoo, the prospect of their patience being exhausted is augmented, and those who, if previously instructed in Oordoo here, would probably remain at the Medical College long enough to complete a course of study, are not unlikely to give it up too soon, and return to this only half taught.

"The plan I would now pursue is to offer to ten or twelve youths of intelligence, who may be selected as students, five rupees a month for the first year that they are in Calcutta, eight rupees for the second year, and ten rupees per mensem for the third, with free passage in a Steamer up and down; and they should, at the time of selection, be informed that as soon as they are qualified they will be appointed in rotation to whichever Medical situation in the province they may prefer, on a salary of not less than twenty rupees per mensem.

"Should His Honor approve of this plan, it will afford me very great pleasure to put it in operation, and to forward to the Medical College such lads as may be disposed to go, but unless a distinct rule for their care and subsistence is previously laid down, it is not likely that parents will be induced to permit them to quit the province.

"If the measure succeeds and is hereafter placed on a wider basis, I conceive that it may be attended with inestimable benefits to this province, and the present inefficient condition of the Native Medical Establishment under my authority would indicate the absolute necessity of adopting some plan wholly different from that which has hitherto been depended on for the supply of Native Doctors."

This plan was submitted to the Council of Education for report, and its adoption was recommended by that body as soon as suitable accommodations can be provided for the lads within the precincts of the College.

A similar experiment upon the same scale is now being carried into effect to supply the province of Assam with Native Doctors, who have been sent down for education by Major Jenkins. In this case the usual preliminary examinations were dispensed with, and although they are not likely, from their limited acquaintance with Hindustani, to pass first rate examinations, there is every reason to believe that they will turn out efficient Native Doctors, and pave the way for the ultimate introduction of a better educated class of men for such appointments.

It is believed that Native Doctors, educated upon a similar plan, are required for service in other parts of India,

independently of those attached to the army: the Rajputana States, for instance, would probably furnish candidates for employment in the service of the various independent chiefs in that part of Hindustan. The Council, therefore, in connection with Major Bogle's proposal, solicited the attention of the Government of India to the subject of supplying the existing wants of all parts of the country in this respect.

During the past year the following extract from a minute by the Hon'ble Sir T. Herbert Maddock, Deputy Governor of Bengal, was submitted to the Council for report. It relates to the best means of encouraging students from distant parts of the country to enter the Medical College:

Encouragement to students of the Upper Provinces to study in the Medical College.

"What I should most rejoice to see as the means of increasing and extending the usefulness of the Medical College of Calcutta, is such an encouragement to students from distant parts of the country to become candidates for admission, as might lead to many youths from Upper India, sharing in the benefits of the professional education here only in India to be obtained. And it appears to me that for this purpose, youths might be examined in the Colleges of Delhi, Agra, Lucknow, and Benares, in the same books and on the same subjects as are the test in Calcutta, and that their examination papers being submitted to the Council of Education, and subjected to scrutiny and comparison with the examination papers of youths educated in Calcutta, the vacant studentships should be distributed according to merit, without any reference to the place of education of any party in the competition."

The Council suggested the attachment of a special scholarship to each Mofussil institution, tenable for five years in the Medical College, subject to the reports of progress being favorable, as the most eligible means of attracting pupils from distant parts of the country. They did not, however, under existing circumstances deem even this measure likely to be attended with any great degree of success. In fact, so long as the demand for educated natives in other departments, and the emoluments obtained without professional study continue to be superior to any inducements that can be held out in connection with the medical profession, it is hopeless to expect that young men of extended acquirements will voluntarily undergo the severe course of five years professional study required, before they can start in life on their own account.

In connection with this subject, the Hon. Mr. Thomason, Lieut. Governor of Agra,

The Hon. Mr. Thomason's Circular to the Agra, Delhi and Benares Colleges.

issued the subjoined circular to the Local Committees of Public Instruction at

Agra, Delhi, and Benares, offering suitable terms to the holders of Senior Scholarships, who might be willing and qualified to proceed to Calcutta for the purpose of studying medicine :

“ The Lieutenant Governor is desirous of doing all that is in his power to promote the resort of educated Natives from the N. W. P. to the Medical College in Calcutta, in order to qualify themselves for the situation of Sub-Assistant Surgeons.

“ The Council of Education at the Presidency have lately suggested with a view to this object, that a scholarship should be devoted in each of the Colleges in these provinces, to the purpose in question.

“ The Committee are consequently authorized to make the following offer to the present holders of Senior English Scholarships in the College, as well as to those who may hereafter obtain stipends of that description. If any sufficiently qualified senior scholar is willing to proceed to Calcutta for the purpose of studying medicine in the Medical College at that place, he will be allowed to retain his stipend while so employed, in addition to the usual allowance to the medical students in the College, and for the term of three years from the time of his entry. If at the end of that term the Council of Education should see cause to recommend that a further period of study be allowed, the continuance of the stipend will be sanctioned for two additional years.

“ It must be understood that the indulgence thus offered is conditional upon the progress which the student may make in his new pursuit while in Calcutta. If at any time the Council of Education should see cause to recommend his removal from the Medical College, he will be allowed a sufficient period for his return to his native zillah, and after the expiration of that period his allowance will cease.

“ No more than one scholar can at present be allowed these advantages from each College. But if the Committee should find that more are desirous of being admitted to them, they will be pleased to bring the fact to the notice of Government.

“ A copy of this letter will be forwarded to the Council of the Medical College, with whom the Committee will be pleased to communicate regarding any candidates who may offer themselves.”

Similar proposals were issued to the Hindu, Hooghly, Dacca, and Kishnaghur Colleges, but as yet without effect.

In the appendix will be found the General Orders, published by the Hon'ble the President in Council in the Calcutta Gazette of the 26th June last, containing the terms on which the pupils of the European Subordinate Medical Department are to study in the Medical College.

The College Council was directed to draw up a code of regulations for the students in question, with special reference to their military character and to their future position in the public service, in order that they might not acquire in the institution, those habits of irregularity, dissipation, and insubordination, which the Government of Ceylon com-

plained of as having rendered some of their subordinate medical officers useless when drafted to the public service.

The rules drawn up and sanctioned by Government are also contained in Appendix C. In all matters relating to internal economy and discipline, they are placed under the sole military control and superintendence of the Secretary to the Medical College, aided by an European Staff Serjeant from the corps of Artillery, placed at the disposal of that officer by His Excellency the Right Honorable the Commander in Chief.

For the present, two houses in the immediate vicinity of the Medical College have been hired for their accommodation, the building of quarters within the precincts of the institution being under the consideration of Government.

In July last, upon the transfer of the Old Fever Hospital subscriptions to the Council of Education, the following account was published in the newspapers for general information :

The Fever Hospital and Municipal Committee having transferred to the custody of the Council of Education the whole of their funds upon a guarantee of their being strictly appropriated to the purpose for which they were subscribed at as early a period as possible, the amount has been added to the New Subscription collected by the Council, and vested in Government Securities.

The following abstract of the aggregate funds is published for general information. They are lodged in the custody of the Government Agent.

NEW FEVER HOSPITAL SUBSCRIPTIONS.

Amount invested in Government Securities			
of the New five per Cent. Loan,	39,800	0	0
Ditto lent out on interest,	800	0	0
Balance in hand,	66	3	9
		40,666	3 9

OLD FEVER HOSPITAL SUBSCRIPTIONS.

Amount invested in Government Securities			
for Sicca Rupees 7,000, or Company's			
Rupees,	7,466	10	8
Ditto Ditto New five per Cent. Loan,	50,900	0	0
Due Interest on Ditto,	2,315	6	5
Balance in hand,	609	1	5
		61,291	2 6

Total Company's Rupees,...101,957 6 3

The sum now in hand amounting with interest to 103,700 rupees is amply adequate for the construction of a Hospital capable of containing three hundred beds, with outdoor dispensary and every convenience attached, upon a

plan similar to that of Messrs. Burn and Co. which is in the possession of Government.

In submitting the matter to the Government, the Council again earnestly advocated the absolute necessity of providing additional hospital accommodation for the Medical College, and adduced as strong evidence of the bad effects upon the School of a deficiency of clinical instruction, the opinion of the Government Examiners and Assessors as contained in the report of the examinations of the past year, and quoted in the margin for readier reference.*

* "As regards the very important branches of clinical instruction, minor operations of surgery, and compounding of medicines, to which the attention of the Council was solicited in last year's report, the Assessors see reason to be satisfied that full advantage has been taken by both teachers and pupils of the means at their disposal. But in those points they think that there is still room for amendment; which, however, they are fully aware can only be attained by more extended Hospital accommodations on the College premises, for both medical and surgical cases."

The third and final report of the Fever Hospital Committee, with the detailed documents appended to it, exhibit in such strong and forcible terms the advantages that would result to the public generally from the building of the Fever Hospital in connection with the Medical College, in addition to its importance in regard to that Institution itself, that the Council confidently anticipate a speedy realization of the hopes of those who have labored so long and zealously as the President and Members of the Municipal Committee, for the health, comfort, and improvement of this great city.

In consequence of the dissecting department having outgrown the dimensions of the building assigned to it, a new dead house has been erected in connection with the hospitals. Within the college, two rooms have been fitted up for the use of the Professor of Anatomy, to enable that officer to discharge his duties with efficiency and comfort, as he remains the greater part of the day in the institution.

The Museum is scarcely capable of containing the additional specimens which are rapidly accumulating, and for which a large supply of glass jars, procured through Dr. Goodeve, is now on its way from Europe.

The additions to this department furnished during the last two years by Medical Officers in different parts of the country, are detailed in the Appendix, with the name of the donor and nature of the preparation attached, in order that

they may be made known to the Court of Directors and the Government.

The best thanks of the Council are due to all those gentlemen who have afforded their valuable aid.

The following is a general return of the Library
Library. of the Medical College during the year 1847:

Number of volumes in the Library, on the 1st of January, 1847,	4,315
Added during the year,	286

Total volumes,...	4,943
-------------------	-------

Lent to the students during the year,	364
Presented to students since the commencement,	549

Missing,	943
Number of Works in store on the 31st December, 1847,	0
Number of volumes ditto,	1,221
	4,000

SUBJECTS OF THE WORKS.

	Volumes.
Anatomy and Physiology,.....	240
Surgery,	460
Medicine,	1,168
Chemistry,	286
Materia Medica,.....	1,086
Medical Jurisprudence,.....	60
Botany,	125
Midwifery,	74
Miscellaneous,.....	501
Total,...	4,000

The books presented to the students include all given from the foundation of the College, and were chiefly copies of the translation of the London Pharmacopeia and similar works, of which a large number were made over to the Council of Education by Government, for the purpose of distribution.

Many of the ordinary text books having become injured by constant use, were re-bound during the past year, and the remaining works which require it, will gradually also be rebound to as great an extent as the contingent allowances will admit of.

The principal donors to the Library during the year 1847 were, H. H. the Nawaub Nazim, Babu Ramanauth Tagore,

Dr. Elliotson, Messrs. Taylor and Walton, the Government of Bengal, the Medical Board, and Dr. Mouat.

In consequence of the dissolution of the Calcutta Medical and Physical Society, the very valuable library belonging to that association, was transferred to the Medical College on the following terms, viz. :

1st. That the library should be held in trust for five years from the date of dissolution of the Society—to become the *bonâ fide* property of Government for the Medical College, should the Medical and Physical Society not revive within that time.

2d. That the Council of Education should pay off all the outstanding liabilities of the Society for books, periodicals, &c. amounting to Co.'s Rupees 344-5-9: the said sum, with compound interest at six per cent. per annum, to be repaid by the Society in the event of its resuscitation.

3d. The said library to be restored to the Medical and Physical Society, if reclaimed by the revival of the Society within five years from the date of its dissolution.

The terms proposed were accepted by the Government, and a grant of Co.'s Rs. 600 sanctioned to purchase glazed book cases to contain the works, with Rupees 100 to print a catalogue of the same.

Including a large number of duplicate copies of some of the volumes of the Society's transactions, the collection consists of nearly three thousand volumes, some of them rare and valuable works of reference.

The whole are available for the use of the profession at the Presidency, and form an important addition to the means of usefulness and instruction possessed by the College.

Together with the books, a portrait of the late Dr. Twinning by John Hayter was transferred to the College, and will be carefully preserved, in accordance with the intentions of those who procured this memorial of a distinguished member and officer of the society.

The Hon'ble Sir T. Herbert Maddock liberally placed at the disposal of the Council two cases of instruments, to be presented to the best final and general students of the year as ascertained by the results of the ordinary public examinations of the institution. The award of these prizes is contained in the Appendix.

Sir Herbert Maddock's Prizes.

The English class continues to maintain its high character for good conduct, another session having passed without a single question having come before the College authorities connected with breaches of propriety and discipline.

Conduct of the English class. The general conduct of the great majority of the Military class has been unexceptionable; a few individuals have, however, been dismissed by the Council of Education for idleness, ignorance, and repeated absence for long periods without leave. The complete absence of any means of healthy and manly amusement within the grounds of the College, still tends to encourage some of the idle members of this large class to wander about the streets during their hours of recreation—the consequence of which has been occasional collision with the police and the inhabitants, in general originating in the abusive language so frequently resorted to in Bengal, and invariably resented by natives of the Upper Provinces.

Conduct of Ceylon Students. The conduct and character of the Ceylon students during the past session have been deserving of commendation—very few irregularities having occurred, and most of the objectionable practices previously complained of, having been apparently abandoned. Their attendance in the lecture rooms and hospital has been assiduous, and their demeanour at all times quiet, respectful, and becoming.

Final Examination English Class. The final examination of the English department was conducted by Surgeon J. Forsyth, the Government Examiner, assisted by the following gentlemen as assessors:

Senior Surgeon J. Grant, Apothecary General.
 Surgeon W. Montgomerie, Garrison Surgeon, Fort William.
 Surgeon R. M. M. Thomson, M. D., Marine Surgeon.
 Surgeon A. Chalmers, M. D., Presidency Surgeon.
 Surgeon H. Chapman, Ditto.
 Asst.-Surgeon F. P. Strong, Surgeon, 24-Pergunnahs.

Subjoined is a tabular statement of the result of the examination, from which it will be perceived that five have passed and one is rejected.

The gold medal for general proficiency and Sir Herbert Maddock's first prize were awarded to Mr. F. J. Pettingal, who passed a distinguished examination in almost all subjects.

List of Students of the English Class for final Examination in the Medical College—Session 1847-48.

Nos.	Names.	Age.	Caste.	Date of Admission.	No. of times absent since their admission.	Character.	REMARKS.
1	Nilmadhub Mookerjee,	20	Brahmin,	1st January 1842, ..	13 days,	Good,	Clinical Clerk 11 months and Dresser 3 months.
2	Gobind Chunder Dutt,	22	Coisto, ...	Ditto, ..	1 day, ..	Fair,	Ditto 11 ditto and ditto 3 ditto.
3	Fakeer Chund Bose,...	23	Ditto, ...	3d February 1843,	22 days,	Ditto,	Ditto 8 ditto and ditto 3 ditto.
4	F. J. Pettingal,.....	21	Christian,	5th April	18 days,	Very good,	{ Clinical Clerk 12 months and Dresser 6 months, attended several cases of labour in the Lying-in-Hospital, obtained 2 Gold Medals and 6 Certificates of Honor.
5	D. Picachy,	20	Ditto, ...	21st July	12 days,	Ditto,	{ Clinical Clerk 12 months and Dresser 6 months, attended 3 cases of labour in Midwifery Hospital, obtained 1 Gold Medal, the Clinical Prize, and 5 Certificates of Honor.
6	W. Norris,	34	Ditto, ...	June 1845,	None,...	Ditto,	{ Apothecary, 19 years in the service, and last attached to H. M.'s 3d Buffs with which he served at Kurnaul during the epidemic which prevailed at that station in 1841. Was with the Regiment in the Gwalior Campaign, and at the battle of Punniar.

Medical College, 15th March, 1848.

FRED. J. MOUAT, M. D., *Secretary.*

Results of the Final Examination of the Students of the English Class in the Medical College—Session 1847-48.

Number.	Names.	Written Examination.	Practical Anatomy.	Practical Surgery.	Anatomy and Physiology.	Chemistry.	Botany.	Medicine.	Surgery.	Midwifery.	Medical Jurisprudence.	Materia Medica.	Result.
1	Nilmadhuh Mookerjee,	Good, ...	Good,	Fair,	Fair,	Fair,	Middling, ..	Good,	Fair,	Indifferent,	Middling,	Middling, ..	Qualified.
2	Gobind Chunder Dutt, ...	Bad,	Good,	Fair,	Middling,	Good,	Good,	Good,	Fair,	Good,	Fair,	Good,	Qualified.
3	Fukeer Chunder Bose,	Middling,	Middling,	Indifferent,	Middling,	Middling, ..	Fair,	Good,	Middling,	Fair,	Fair,	Fair,	Rejected.
4	F. J. Pettingal,	Good,	Good,	Good,	Very good	Excellent, ..	Very good,	Very good,	Good, ...	Excellent, ..	Excellent,	Excellent,	Qualified.
5	D. Picachy, ...	Middling,	Good,	Very good,	Good,	Indifferent,	Indifferent,	Good,	Fair,	Good,	Good, ...	Indifferent,	Qualified.
6	W. Norris, ...	Fair,	Good,	Fair,	Fair,	Good,	Good,	Very good,	Fair,	Indifferent,	Good, ...	Very good,	Qualified.

(True Copy)

FRED. J. MOUNT, M. D.

Secretary Medical College.

(Signed) J. FORSYTH,
Examiner.

March 30, 1848.

List of First Class Students of the Military Class for final examination in the Medical College, Session 1847-48.

Number.	Names.	Date of admission.	No. of times absent since their admission.				Duties performed by them.		General Character.	REMARKS.
			Absent.	Sick.	Leave.	Total.	Hospital Attendance.	Dispensary Attendance.		
1	Shaik Kurrim Bux, 1st,	March 1845,	...	...	...	...	2 Months,	4 Months,	Good,	{ A very attentive and good student.
2	Imdad Hossain,	Ditto, .....	...	...	...	...	2 Ditto, ...	7 Ditto, ...	Ditto,	{ Has latterly been attentive.
3	Khajah Hingun,	Ditto, .....	...	2	...	2	4 Ditto, ...	1 Year, ...	Fair,	{ Was selected for permanent employment at the Out-door Dispensary, on account of good behaviour and superior qualifications. A very steady good man, and a diligent student.
4	Myboob Khan,	Ditto, .....	...	...	...	...	1 Year, ...	2 Months,	Good,	{ Ditto ditto. A well behaved lad, and the best dresser in the whole class : particularly smart and intelligent.
5	Abdool Hossain,	Ditto,	2	...	...	2	2 Months,	4 Ditto, ...	Fair,	{ Has been regular and attentive.
6	Syed Abdool Ouahud, ...	Ditto,	24	...	...	24	1 Year, ...	2 Ditto, ...	Ditto,	{ Selected for permanent Dispensary duty on account of superior qualifications : quiet and well behaved.
7	Shaik Mungloo,	Ditto, .....	...	...	...	...	2 Months,	4 Ditto, ...	Ditto,	{ Attentive and regular.

First Class Students of the Military Class for final examination in the Medical College, Session 1847-48.—(Contd.)

Number.	Names.	Date of Admission.	No. of times absent since their admission.				Duties performed by them.		General Character.	REMARKS.
			Absent.	Sick.	Leave.	Total.	Hospital Attendance.	Dispensary Attendance.		
8	Shaikh Kurrim Bux, 2d,	March 1845,	...	...	...	...	{ 1 Year, } { Feml. } { Hospl., }	.....	Very good,...	{ Was selected for permanent employment in the Female Hospital on account of good behaviour and superior qualifications. A smart and attentive student. Ditto ditto.
9	Elahee Bux, 1st,.....	Ditto,.....	...	...	...	...	Ditto,.....	.....	Ditto,.....	{ Attentive and regular, but not very diligent.
10	Abdoollah Khan,.....	Ditto,.....	10	3	...	13	2 Months,	2 Months,	Fair,	{ Selected for permanent Dispensary duty on account of good conduct and superior qualifications. A very steady, attentive, and good lad.
11	Saduek Allie Khan, ...	Ditto,.....	...	2	...	2	1 Year, ...	2 Ditto,...	Ditto,	{ Regular and attentive. An attentive and well behaved lad.
12	Shaikh Shair Allie,.....	June 1845,...	...	...	...	...	2 Months,	3 Ditto,...	Ditto,	{ A very superior well behaved, attentive and diligent student.
13	Mahomed Ufsur,.....	Ditto,.....	...	...	...	...	3 Ditto,...	2 Ditto,...	Good,	
14	Shaikh Sahadut,.....	Ditto,.....	1	10	6	17	2 Ditto,...	2 Ditto,...	Fair,	

15	Fyoozoola Khan,.....	April 1846,...	...	...	...	2 Months,	2 Months,	Good,	{ A quiet, attentive, and well behaved student.
16	Zuhur Ul Huck,	Ditto,.....	...	3	...	2 Ditto,...	2 Ditto,...	Fair,	Attentive, but rather dull.
17	Bakir Khan,.....	Ditto,.....	...	...	...	2 Ditto,...	2 Ditto,...	Good,	{ Attentive with fair average abilities.
18	Meer Hedyut Alli,	Ditto,.....	...	...	...	2 Ditto,...	3 Ditto,...	Ditto,	A smart good student.
19	Mirza Mahomed Jaun,...	Ditto,.....	...	...	...	2 Ditto,...	3 Ditto,...	Very good,	Well behaved and attentive.
20	Khoseal Ram,	Ditto,.....	...	3	...	2 Ditto,...	3 Ditto,...	Ditto,	Ditto ditto.
21	Mirza Kodrut Allie,	Ditto,.....	...	...	...	2 Ditto,...	2 Ditto,...	Good,	Ditto ditto.
22	Shaikh Abdool Ouahub, 2d	June 1846,...	...	...	...	2 Ditto,...	2 Ditto,...	Ditto,	Ditto ditto.
FREE STUDENTS.									
23	Luthfoollah Khan,	July 1844,...	...	...	...	2 Ditto,...	2 Ditto,...	Fair,	{ Not employed in either Hospital or Dispensary this year.
24	Ruhmuth Allie,	Ditto, .....	...	...	...	2 Ditto,...	2 Ditto,...	Ditto,	}

FRED. J. MOUAT, M. D.

Secy. Medical College.

*Medical College,
The 15th March, 1848.*

15	Fyzoolla Khan,	Good,	Good,	Good,	Very good.
16	Zahur Ul Huq,	Moderate,...	Pretty good,	Good,	Good.
17	Bakir Khan,	Good,	Pretty good,	Good,	Fair.
18	Meer Hedyet Allie,	Good,	Very good,,"	Good,	Fair,
19	Mirza Mahomed Jaun,	Excellent,...	Very good,,"	Good,	Good,
20	Khoseal Ram,.....	Moderate,...	Very good,,"	Good,	Fair.
21	Mirza Kodrut Allie,	Good,	Very good,,"	Good,	Middling.
22	Shaikh Abdool Ouahub,.....	Good,	Very good,,"	Good,	Bad.
FREE STUDENTS.					
23	Luthfoolla Khan,.....	Moderate,...	Pretty good,	Good,	Bad.
24	Ruhmuth Allie,	Good,	Pretty good,	Good,	Middling.

Second prize of Books.
Silver Medal for best anatomical preparation.

FRED. J. MOUNT, M. D.
Secretary.

Medical College, the 30th March, 1848.

The final examinations of the Military class were conducted by Messrs. Walker, Webb, R. O'Shaughnessy, Jackson, and Mouat. The results are recorded in a tabular form as usual.

The following is the order of merit in which the candidates were classed—the result having been influenced in some degree by the manner in which they had discharged the practical duties of the out-door Dispensary and Hospital.

First Class.

Shaikh Kurrem Bux, 2d.	Shaikh Kurreem Bux, 1st.
Mirza Mahomed Jaun.	Shaikh Shair Ali.
Meer Hedyut Ali.	Fyzoola Khan.
Shaikh Elahee Bux, 1st.	Emdad Hossein.

Second Class.

Myboob Khan.	Shaikh Sahadut.
Abdool Hossein.	Bakur Khan.
Syud Abdool Ouahud.	Zuhur UI Huq.
Shaikh Mungloo.	Khoseal Ram.
Khajah Hingun.	Mirza Kodrut Ali.
Abdoola Khan.	Ruhmuth Ali.
Saduek Ali Khan.	Shaikh Abdul Ouahub.
Mahomed Ufzur.	Luthfoola Khan.

The students from Assam studying in the Military class for the purpose of qualifying themselves for the office of native doctors in their own Province, are deemed deserving of special mention—as with one exception, their conduct has been unexceptionable: they have been remarkable for their industry and attention, and two of them have obtained prizes. Notwithstanding the inferior nature of their qualifications at the time of admission, they have acquired as fair an amount of professional information as most of the students of their standing, and will, if they continue to fulfil their present promise, turn out excellent and efficient native doctors. From the confined and ill-ventilated nature of their quarters, some of them have been constant and severe sufferers from fever. The experiment of educating these lads, so far as it has gone, has been perfectly successful, and holds out every encouragement to adopt a similar plan for other parts of India.

Surgical Class Professor O'Shaughnessy furnished the following report of the Surgical class:—

“I have much pleasure in reporting to the College Council the highly satisfactory result of my examination of the senior students of the Military class. They are all, in my opinion, qualified in Surgery for the public service.

"A few of them were perhaps less expert and dexterous in applying bandages, and dressing wounds than could be wished, but at the same time considering the very limited opportunities afforded them by the practice of so small an hospital, considering the number of students to be taught, they acquitted themselves with great credit to themselves, and to the zeal, industry and talent of their teacher Pundit Madusudun Gupta, from whom alone they received instruction in Surgery."

The attainments of the pupils of the Military class in **Materia Medica Class.** **Materia Medica** are very inferior to their acquirements in Anatomy and Surgery, **Military School.** which appears to be due in some measure to the undue amount of labour their teacher is called upon to undergo. The class consists of more than a hundred pupils, subdivided, according to their standing in the Institution, into three classes of Medicine, and three classes of **Materia Medica**, to all of which it is manifestly impossible for one teacher to do justice. Their pronunciation of scientific names and terms was so vicious as in many instances to be nearly unintelligible; they were acquainted with the names of diseases, but ignorant of the remedies requiring to be used in the treatment of their various stages, if taken out of the particular beat in which they had been taught; and a large amount of the information possessed by them was evidently a mere effort of memory. Some of these are defects for which their teacher is responsible, others arise from the complete absence of any efficient means of affording them proper clinical instruction, with the small and inadequate hospital accommodation attached to the College. In justice to their teacher it is but fair to remark, that the knowledge of pharmaceutical chemistry exhibited was superior to that elicited on any former occasion, and that with the exception of some degree of carelessness in regard to pronunciation, he has accomplished as much as can be expected in the absence of text books, and in teaching in a language with which he is not himself intimately acquainted.

The Military Class is so popular throughout the Army, and has made such substantial advances in many important subjects, as to be deserving of every degree of attention and consideration being bestowed upon it. A strong representation respecting the necessity of providing an additional teacher, and furnishing means of efficient clinical instruction, has been submitted to the Council of Education by the college authorities, and is under consideration.

The students of the English class have been generally punctual in their attendance on lectures during the past session. Their assiduity in practical dissection has not been so great as it ought to have been, partly owing to the interference of lectures and hospital practice with the hours of attendance in the dissecting room. It is proposed to remedy this inconvenience during the next dissecting season, by a different arrangement of the lecture and hospital attendance.

Report on the Anatomical Class, Medical College, for the Session 1847-8, English Department.

The senior students were examined by written questions and answers, for a copy of which see Appendix D. and by actual dissections and demonstrations of the parts dissected.

General Examinations.

Fourteen of the junior students requested permission, which was granted, to take part in these examinations with a view to contend for the prizes. The two gold medals were awarded to Mutty Lall Gupto and Sreenath Mookerjee 1st, and the silver medal to Mr. Covington.

Certificates of Honor were awarded to the following students:—

H. Wilkin Jones.	| Mahomud Jaun, (junior student.)
Sibehunder Bysack.	
Omes Chunder Mitter.	
	Nobogopal Gosaul.

The remainder of the junior class were examined, *viva voce*, on the bones, blood vessels, and viscera. They acquitted themselves generally to our satisfaction.

The students of the Military class were examined in dissections and demonstrations. On this occasion as at the examinations last year, they distinguished themselves by the extent of their anatomical knowledge, and by the manual dexterity displayed in their dissections.

Military Class.

A silver medal was awarded to Mohamud Jaun for the best set of anatomical preparations of blood vessels.

Anatomy.

The course of Materia Medica and Therapeutics consisted of ninety-three lectures, exclusive of examinations, and terminated on the 15th of November, the lectures having been delivered daily, in order that, in accordance with the amended distribution of subjects rendered necessary by the recognition of the College, it might be completed in the summer season, so as not to interfere with the practical duties of the dissecting department during the cold weather.

The second division of the course of Medical Jurisprudence was devoted exclusively to a detailed consideration of the subject of toxicology, and consisted of forty-three lectures, including the testing of some of the more important poisons by the students themselves.

Medical Jurisprudence.

This practice was instituted for the first time, and accomplished to but a limited extent, owing partly to the want of a sufficient amount of the requisite tests and apparatus, and in part to the very limited leisure at the disposal of the teacher for the preparation of the means of experimental investigation. As it is a most essential and valuable portion of medico-legal instruction, it will be carefully attended to for the future, and gradually rendered as complete as the means at the disposal of the College will admit of.

The conduct and attendance of the pupils of both classes was satisfactory.

Concerning the Surgical department of the English Class, **Surgical Report.** Professor O'Shaughnessy submitted the annexed memorandum:

"I have much pleasure in reporting on the general good conduct, regular attendance at lectures, and the satisfactory progress of my class during the past session.

"The result of the written examination in Surgery was very satisfactory. The great majority of the replies evinced considerable knowledge of the different subjects they embraced; and at the same time, gave proof of the attention paid by the class to the practice of the Hospital, as I endeavoured so to shape my questions, that they might bear upon different accidents, and diseases, admitted into the Surgical wards during the year.

"The examination in Practical Surgery was by far the most satisfactory I have presided over since my appointment to the chair of Surgery. The freedom, ease, and dexterity exhibited by the great majority of the students, in performing the most difficult surgical operations on the dead body, could not I feel assured be surpassed by any European class of the same standing. Of course there were some exceptions, of whose efforts, either written or practical, I cannot speak in such favorable terms. They, however, were comparatively few.

"Since January last, I have opened a Dispensary for diseases of the Eyes, in connexion with the general Dispensary attached to the College Hospital. I attend there every morning, to prescribe and operate. Notwithstanding the very short time since it was established, I have a crowd of applicants for relief, in daily attendance. The students have therefore now for the first time the means of learning practically in the College, one of the most important branches of Surgery, which, distance from the Eye Infirmary, hitherto placed quite beyond their reach.

"I have awarded the gold medal to Mr. Ellis, not for his paper alone, but for the joint merit of his operations on the body, and his written answers."

Dr. Jackson's statement regarding the class of Medicine, and the clinical duties of the hospital is subjoined:—

Medicine. “It is with very great pleasure and satisfaction that I have to state that during the whole of the past session, the students in attendance upon my lectures and the medical ward of the hospital, have been most regular and diligent in the performance of their duties. The examination of the third and fourth year students on the whole surpasses that of former years, and with only a few exceptions, the papers are most creditable. Amongst those who have not succeeded in gaining a prize, but who are deserving of commendation, I beg to mention especially, Kally Doss Nundy, Messrs. Anthoniz, Jones, Durant, and Rosemalaeoq. The hospital duties have been well performed, the clinical clerks accompanying me in my morning visits and keeping a faithful register of the cases and post mortem appearances, which are from time to time inspected by myself, and are laid before the medical member of the Council of Education every month.”

In the Appendix are contained tabular returns of the hospital and dispensary practice of the past session, of which those of the midwifery and surgical departments are again particularly interesting. The results of the general examinations of the year are also appended, and afford good promise of future excellence. In some respects they are deemed superior to those of any former year, and in all are considered creditable to the Institution.

FRED. J. MOUAT, M. D.

Secretary.

*Council of Education,
April 8, 1848.*

APPENDIXES.



Appendix A. No. I.

*Annual Return of Diseases treated in the Male and Female Hospitals of the Medical College, from
1st January to 31st December 1847.*

DISEASES.	Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	REMARKS.
1. Zymotic diseases,	41	1063	1104	948	96	60	
2. Sporadic diseases—							
3. Of uncertain or variable seat,	4	169	173	158	6	9	
4. Of the nervous system,	6	134	140	110	23	7	
5. Of the respiratory organs,	6	94	100	80	15	5	
6. Of the organs of circulation,	0	1	1	0	1	0	
7. Of the digestive organs,	7	159	166	135	24	7	
8. Of the urinary organs,	0	11	11	9	1	1	
9. Of the organs of generation,	8	71	79	68	0	11	
10. Of the organs of locomotion,	10	118	128	119	0	9	
11. Of the integumentary system,	5	141	146	139	0	7	
12. External causes, poisoning, asphxia, { injuries, &c.,	24	333	357	326	17	14	

DISEASES.	Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	REMARKS.
I.							
1. Measles,	0	3	3	3	0	0	* Most of the cases were of a severe form principally among European Seamen of irregular habits, admitted at an advanced stage of the disease, and complicated in many instances with disease of the liver.
2. Diarrhœa,	0	27	27	27	0	0	
3. Dysentery,	19	251	270	210	42	18*	
4. Cholera,	0	110	110	76	34	0	* One severe case occurring from a snake bite in the arm, followed by extreme sloughing of the integuments.
5. Ague,	0	130	130	120	0	10	
6. Remittent Fever,	12	264	276	240	20	16	
7. Common continued fever,	0	124	124	122	0	2	* The deaths were cases of Hospital Gangrene, originating in sloughing Buboes at an unhealthy season of the year.
8. Erysipelas,	0	10	10	10*	0	0	
9. Syphilis,	10	144	154	140	0	14	
II.							
10. Inflammation,	0	35	35	35	0	0	Of the eye.
11. Hemorrhage,	0	9	9	9	0	0	
12. Dropsy, ..	2	30	32	27	3	2	
13. Abscess,	0	14	14	14	0	0	* The deaths were cases of Hospital Gangrene, originating in sloughing Buboes at an unhealthy season of the year.
14. Mortification,	1	9	10	8	2*	0	

15. Purpura,	0	58	58	53*	0	5	* Nearly all cases of sea scurvy.
16. Scrofula,	1	4	5	5	0	0	
17. Carcinoma,	0	3	3	3	0	0	
18. Tumors,	0	7	7	4	1*	2	* The fatal case was an enormous osteo-sarcomatous tumor—involving the whole of the thigh, for which amputation at the hip joint was performed: the patient, an emaciated and debilitated subject, died from collapse 6 hours after the operation.
19. Apoplexy,	0	7	7	0	7*	0	
20. Paralysis,	2	12	14	6	10	0	
21. Epilepsy,	0	10	10	10	0	0	{ * 6 of these were cases of insolation among European Seamen, and brought on by exposure to the sun during a state of intemperance. All cases of } Idiopathic 10. Fatal 6. Tetanus,... } Traumatic 4. Fatal 4.
22. Insanity,	0	7	7	6	0	1	
23. Delirium Tremens,	4	82	86	75	5	6	
24. Brain, &c., diseases of—							{ All occurred among European Seamen, and invalid soldiers of dissipated habits.
25. Bronchitis,	4	47	51	47	0	4	
26. Pleurisy,	0	24	24	24	0	0	
27. Pneumonia,	0	2	2	0	2	0	{ Nearly all occurred among Native Portuguese Christians.
28. Asthma,	0	9	9	9	0	0	
29. Phthisis,	2	12	14	0	13	1	

III.

IV.

DISEASES.	Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	REMARKS.
V.							
30. Aneurism,	0	1	1	0	1	0	Of the aorta.
31. Heart, &c., diseases of—							
VI.							
32. Enteritis,	0	8	8	6	2	0	The fatal case from external injury.
33. Peritonitis,	0	4	4	3	1	0	
34. Tabes Mesenterica,	0	1	1	1	0	0	
35. Ascites,	1	27	28	20	6	2	
36. Hernia,	0	4	4	4	0	0	
37. Colic or ileus,	0	10	10	10	0	0	
38. Hematemesis,	0	1	1	1	0	0	{
39. Hepatitis,	3	32	35	24	10	1	Chiefly among European Seamen of in-
40. Jaundice,	0	9	9	9	0	0	temperate habits.
41. Spleen, diseases of,	3	63	66	57	5	4	{
VII.							
42. Diabetes,	0	1	1	0	0	1	{
43. Stone,	0	5	5	4	1	0	The fatal case occurred in an unhealthy
44. Stricture,	0	5	5	5	0	0	subject, who died from the effects of in-
VIII.							filtration 26 days after the operation.
45. Childbirth,	8	60	68	57	0	11	Including amenorrhœa, leucorrhœa, &c.
46. Uterus, &c., diseases of,	0	11	11	11	0	0	

Appendix A. No. II.

Table of Admissions and Deaths in the Medical College Male Hospital, for the year 1847.

MONTHS.	EUROPEANS.					REMARKS.	NATIVES.					REMARKS.	
	Admit- ted.	Discharg- ed.	Died.		Medical Cases.		Admit- ted.	Discharg- ed.	Died.				
			Medical ditto.	Surgical ditto.					Medical ditto.	Surgical ditto.			
January 1847,	60	25	57	24	8	0	Of the Deaths among Europeans—	54	37	58	32	2	Of the Deaths among Natives—
February "	64	28	54	22	7	1	27 were from 1 to 2	58	34	56	30	5	23 were from 1 to 2
March "	66	25	61	24	6	0	days in Hospital,	62	38	53	35	7	days in Hospital,
April "	72	24	58	19	8	0	5 were from 2 to 7	59	36	52	38	9	26 were from 2 to 7
May "	76	20	64	27	11	0	days in Hospital,	57	34	55	39	8	days in Hospital,
June "	78	24	65	20	2	0	28 were from 7 to 14	63	36	57	34	6	24 were from 7 to 14
July "	73	26	65	22	6	0	days in Hospital,	68	38	56	36	4	days in Hospital,
August "	68	25	59	28	9	1	20 were from 14 to 20	65	44	53	41	8	8 were from 14 to 20
September "	75	22	61	26	5	1	days in Hospital,	64	37	54	38	6	days in Hospital,
October "	77	20	62	24	8	0	10 were from 20 to 40	67	34	51	35	8	12 were from 20 to 40
November "	62	22	66	25	10	3	days in Hospital.	66	32	54	37	4	days in Hospital.
December "	71	18	56	23	3	1		55	35	51	35	7	
Total,...	842	279	728	284	83	7	Total,...	738	435	650	430	75	18

Medical College, March 15, 1848.

FRED. J. MOUAT, M. D. Secretary

Appendix A. No. III.

Annual Return of Surgical Operations performed by Professor R. O'Shaughnessy, at the Medical College from the 1st January to 31st December 1847.

Nature of Operations.	Number.	RESULT.		REMARKS.
		Died.	Discharged.	
Amputation of the shoulder joint,...	2	0	2	As these tables may hereafter be found to possess some interest in a statistical point of view, and as last year may be considered the first of a new era in Surgery, owing to the discovery of a practical method of rendering patients insensible to the pain of Surgical operations, I think it right to notice the fact, that nearly the whole of the capital operations in this table were entirely painless, having been performed while the patients were in a state of insensibility from the inhalation of Ether.
Ditto of the arm, (a)	9	2	7	
Ditto of the hand,	1	0	1	
Ditto of the hip joint, (b)	1	1	0	
Ditto of the leg, (c)	10	4	6	The first case on which the anæsthetic properties of this drug were tested in the College Hospital, proved the great blessing the discovery was capable of conferring, perhaps more satisfactorily than any other on the list. It was that of a patient whose left leg was amputated. He was admitted into hospital in the afternoon of the 19th March, after travelling a distance of 80 miles. He was wounded by the bursting of a gun. The left leg was shattered, the right arm was broken, and the hands, arms, thighs, and different parts of the body had pieces of wood and iron imbedded in them.
Ditto of the foot,	1	0	1	
Ditto of serotal tumors,	3	0	3	
Lithotomy, (d)	5	1	4	
Excision of the upper jaw for { tumor of the antrum,	1	0	1	From the motion, exposure, and irritation consequent on so long a journey in this wounded state, the poor man's sufferings were heightened to such an extent, that it was with the greatest difficulty he could be moved from the palanquin to the bed, and when there, the slightest interference with the shattered leg caused him extreme agony.
Ditto of large encysted tumors { from the neck,	5	0	5	Immediate amputation having been determined upon, Ether was produced, and the patient told he would be relieved from his sufferings if he inhaled it. This promise was sufficient to induce him to breathe the vapour with a hearty good will.
Ditto of osteo-sarcomatous ditto { from the arm,	3	0	3	

Ditto of cancerous ditto from ditto,	2	0	2
Ditto ditto ditto from the tongue,...	1	0	1
Exirpation of the eye for fungus { hematodes,.....}	1	0	1
Operations for cataract,	10	0	10
Ditto for strangulated hernia,	1	0	1
Luxations of the hip joint reduced,	9	0	9
Ditto of the shoulder ditto,	6	0	6
Ditto of the lower jaw ditto,.....	3	0	3
Minor operations, (e)	80	0	80
Total,.....	154	8	146

In the course of a very few minutes all pain left him. The limb, which he could not bear to be touched before, might now be handled roughly without his feeling it. The patient's countenance changed from its expression of suffering to that of ease and cheerfulness. He never lost his consciousness, however, for a moment, and the leg was amputated while the owner was looking on with the expression of an indifferent observer.

No bad symptoms followed the operation, and he left the Hospital cured. I might cite many other cases from this list equally conclusive of the power this drug possesses as an anæsthetic agent, but it would be impossible to produce an instance more demonstrative of the great practical utility of it, when the most urgent and desperate cases demand immediate surgical interference.

After this case I operated on no patient admitted into hospital without previously causing Ether to be inhaled, and with a very few exceptions there was not the slightest suffering, and, I am happy to add, I had not in a single instance cause to regret its use.

Since the commencement of this year, Chloroform, a better and more manageable anæsthetic, has been introduced to the notice of the profession in India. I hope next year to be able to speak as favourably of it, as my present experience leads me to anticipate.

(a) One of the fatal cases occurred in a feeble emaciated man, who had extensive disease of the elbow joint, and was rapidly sinking from the effects of irritative fever; the operation was resorted to as affording him the only chance of recovery—the other died from organic disease of the chest.

(b) The subject of this operation was a young Hindu lad in the last stage of emaciation and debility from the effects of an enormous osteo-sarcomatous tumor, involving the whole of the left thigh to within a few inches of the groin: the operation afforded him the only possible chance of life—he died from collapse, six hours after the operation.

(c) The fatal cases occurred in feeble old men, who were run over in the streets and sustained other severe injuries, besides compound comminuted fractures of the leg for which amputation was performed.

(d) The fatal case occurred in an unhealthy subject, who died 26 days after the operation in consequence of infiltration of urine.

(e) Including amputation of fingers and toes, amputation of the penis, excision of small tumors, operations for fistulæ in ano, or fistula lachrymalis, hydrocele, &c. &c.

(True Copy,)

(Signed)

FRED. J. MOUNT, M. D.,

(Signed)

R. O'SHAUGHNESSY,

Medical College,
March 1848.

Secretary.

Professor of Surgery.

Appendix A. No. IV.

Annual return of Diseases treated in the Out-Door Dispensary of the Medical College, from 1st January to 31st December 1847.

Nos.	DISEASES.	Remained.	Admitted.	Total.	Discharged.	Relieved.	Absconded.	Died.	Remaining.	REMARKS.
1.	Zymotic Diseases,	48	6339	6387	6344	0	0	0	43	
	Sporadic Diseases—									
2.	Of uncertain or variable seat, ...	16	2111	2127	1949	162	0	0	16	
3.	Of the Nervous System,	1	115	116	68	46	0	0	2	
4.	Of the Respiratory Organs,	9	752	761	660	96	0	0	5	
5.	Of the Digestive Organs,	6	1371	1377	1234	133	0	0	10	
6.	Of the Urinary Organs,	0	37	37	37	0	0	0	0	
7.	Of the Organs of Generation, ...	0	60	60	60	0	0	0	0	
8.	Of the Organs of Locomotion, ...	12	2387	2399	2202	184	0	0	13	
9.	Of the Integumentary System, ...	32	2319	2351	2198	140	0	0	13	
10.	External causes, poisoning, asphyxia, injuries, &c.,	9	1056	1065	1033	20	0	0	12	
	1.									
1.	Thrush,	0	30	30	30	0	0	0	0	
2.	Diarrhoea,	0	299	299	299	0	0	0	0	
3.	Dysentery,	11	881	892	886	0	0	0	6	
4.	Ague,	5	620	625	620	0	0	0	5	
5.	Remittent Fever,	6	488	494	492	0	0	0	2	
6.	Common continued Fever,	7	1326	1333	1319	0	0	0	14	
7.	Erysipelas,	0	9	9	9	0	0	0	0	
8.	Syphilis,	19	2686	2705	2689	0	0	0	16	

Nos.	DISEASES.	Remained.	Admitted.	Total.	Discharged.	Relieved.	Absconded.	Died.	Remaining.	REMARKS.
	2.									
9.	Inflammation,	7	436	443	438	0	0	0	5	Of the Eyes.
10.	Dropsy,	0	385	385	381	0	0	0	4	Chiefly Hydrocele.
11.	Abscess,	0	1070	1070	1066	0	0	0	4	
12.	Mortification,	0	6	6	6	0	0	0	0	
13.	Scrofula,	7	158	165	162	0	0	0	3	
14.	Tumors,	0	56	56	56	0	0	0	0	
	3.									
15.	Paralysis,	1	79	80	68	10	0	0	2	
16.	Neuralgia,	0	22	22	0	22	0	0	0	
17.	Epilepsy,	0	9	9	0	9	0	0	0	
18.	Insanity,	0	5	5	0	5	0	0	0	
	4.									
19.	Quinsey,	0	49	49	49	0	0	0	0	
20.	Bronchitis,	7	465	472	470	0	0	0	2	
21.	Pleurisy,	0	123	123	123	0	0	0	0	
22.	Asthma,	2	79	81	0	78	0	0	3	
23.	Phthisis,	0	28	28	0	28	0	0	0	
24.	Lungs, &c. diseases,	0	8	8	8	0	0	0	0	
	5.									
25.	Teething,	0	56	56	56	0	0	0	0	
26.	Enteritis,	0	18	18	18	0	0	0	0	
27.	Worms,	0	96	96	96	0	0	0	0	
28.	Ascites,	0	51	51	0	49	0	0	2	
29.	Hernia,	0	14	14	0	14	0	0	0	

[illegible]

FRED. J. MOUAT, M. D.

Secretary.

Medical College, March 15, 1848.

Appendix A. No. V.

Return of Minor Surgical Operations performed at the Out-Door Dispensary of the Medical College, during the year 1847.

Nature of Operations.	Number.	RESULT.			REMARKS.
		Died.	Unknown.	Cured.	
Amputation of fingers and toes,.....	12	0	0	12	
Ditto of hypertrophied prepuce.	5	0	0	5	
Eneysted and other tumors excised,	36	0	0	36	
Tapping for abdominal dropsy,	6	0	6	0	
Ditto for hydrocele,.....	240	0	0	240	
Fistulas laid open,	108	0	0	108	
Abseesses opened,	1070	0	0	1070	
Teeth extracted,	420	0	0	420	
Operation for phymosis,	72	0	0	72	
Ditto for onychia,	120	0	0	120	
Ditto for ranula,	4	0	0	4	
Luxations of shoulder joint reduced,	6	0	0	6	
Ditto of wrist joint ditto,	0	0	0	0	
Ditto of thumb ditto,	4	0	0	4	
Ditto of clavicle ditto,.....	2	0	0	2	
Ditto of lower jaw ditto,	3	0	0	3	
Prolapsus ani reduced,.....	5	0	0	5	
Venesection and arteriotomy,	230	0	0	230	
Catheters passed for retention of } urine, }	156	0	0	156	
Setons introduced,	24	0	0	24	
Foreign bodies extracted from va- } rious parts of the body, }	16	0	0	16	
Incarcerated hernia, reduced by } taxis, }	36	0	0	36	
Fraetures put up.....	104	0	0	104	
Total,.....	2679	0	6	2673	

FRED. J. MOUAT, M. D. *Secretary.*

Medical College, March 15, 1848.

Appendix A. No. VI.

Tabular statement of the number of Patients treated in the Out-Door Dispensary of the Medical College, during each month of the Year 1847.

Number.	Months.	1847.	REMARKS.
			Of the numbers mention in the preceding columns there attended in 1847,
			Once, 4084
			Twice, 2791
			Thrice, 2215
1.	January,.. ..	1180	Four times, 1822
2.	February,... ..	958	Five times, 1546
3.	March,	1426	Six times,... .. 1273
4.	April,... ..	1415	Seven times,... .. 891
5.	May,	1379	Eight times, 669
6.	June,... ..	1253	Nine times, 495
7.	July,	1436	Ten times,... .. 343
8.	August,	1792	Eleven times,.. .. 241
9.	September,	1673	Twelve times, 176
10.	October,	1326	
11.	November,	1290	
12.	December,... ..	1418	
	Total,	16546	Total, 16546

FRED. J. MOUAT, M. D.

Medical College, March 15, 1848.

Secretary.

Appendix A. No. VII.

Report of the Obstetric practice of the Medical College, Female Hospital, from 1st March 1847 to 1st March 1848.

The number of deliveries in the Lying-in-Hospital during the past 12 months has been 56, being 8 more than during the preceding year, and 17 more than the annual average of six former years.

A gratifying evidence is thus afforded of the increasing estimation of scientific obstetrics among the native community, and of the gradual but sure extinction of popular oriental prejudices on this subject.

That the objections of the Hindoos against the employment of male practitioners of midwifery, in fact, no longer exist in Calcutta, and that this remarkable revolution in the public mind has occurred during the last few years, and is mainly attributable to the agency of the Medical College Midwifery School and Hospital is, I think, strongly corroborated by the following facts:

In the *India Register of Medical Science* for January last, there appeared a tabular statement of 41 cases of "difficult labor," which had occurred during the 3 years then ending in the practice of a single individual, Baboo Prosonocoomar Mitter, a graduate of the Medical College, who had greatly distinguished himself by his successful application to that particular branch of study, while a "resident pupil," and afterwards "House Surgeon" to the Female Hospital under my distinguished predecessor, Dr. Goodeve:

Of these 41 cases, the following are the abstracted results:

Patients delivered naturally,	31
————— by forceps,	3
————— by perforation,	3
————— by version,	4
Total,	41

Of these women seven died, all the rest of the mothers were saved; of the children fourteen were still-born, the rest lived; it must be remembered that though 31 of the above patients are set down as having been delivered "naturally" they were all cases of difficulty and danger, requiring active medical treatment during parturition, and without which they would doubtless have proved fatal.

Another of our College graduates, Baboo Gobin Chunder Goopto, also in extensive practice among his countrymen in Calcutta, has furnished me with the details of 22 cases of difficult labor, which have occurred to him during the same period, showing the following results:

Patients delivered naturally,	12
————— by forceps,	6
————— by perforation,	2
————— by version, ...	2
Total,	22

Having been consulted at the time of occurrence by both of these young men in most of the above difficult cases, and assisted them in all the operations, I can vouch for the general accuracy of their statement; but it is within my knowledge that *all* of our College graduates, (six or more in number,) now settled and practising in Calcutta, are habitually called to take charge of the women of the families they attend during

their confinements, and that though not required to render manual assistance, except in cases of difficulty, they are always requested to undertake the medical management of every case, both during and after delivery; under this silent influence the old abominable practice of the Hindoos, that of shutting up the parturient females for 40 days in some filthy out-house, enveloped in the fumes of charcoal, and drenched with heating tisannes, is entirely abandoned by all the respectable Natives in Calcutta. It cannot be doubted therefore that in addition to the salvation of life, effected by the judicious and active treatment resorted to in the above and other similar *difficult* cases, an incalculable amount of good has been done in the prevention of puerperal disease under the improved management of *natural* labors now universally adopted by the people.

In the College Hospital it has been my endeavour to teach not only the duties of the practitioner under circumstances of difficulty, but especially the mechanism and management of natural labor, well aware that except in *Hospital* our students will have no opportunity of learning this elsewhere; for their assistance will seldom be sought except in cases of difficulty; and I am happy to say that the students have all evinced a laudable eagerness to avail themselves of the opportunities afforded them of acquiring a practical knowledge of the art by attendance on the cases in Hospital whenever I could manage to be present.

I have had greatly to lament the untimely removal of the House Surgeon Tameez Khan in the middle of the session, whose place has been temporarily supplied, but very inefficiently, by Baboo Susseeboosun Seal. A great deal of hospital duty of a most harassing description from its very nature, has consequently for the last six months devolved upon myself, which was not contemplated by the rules of the hospital; and an additional necessity for a revision of these rules has thus arisen.

I must however mention with great commendation the assistance given me in the discharge of all the Hospital duties by Nobin Chunder Bose, the "Goodeve Scholar," whose kindness and attention to the sick, and whose readiness to communicate information to his fellow students, have been on a par with his diligence in the prosecution of his studies.

I beg to place in the library of the College the accompanying volume, containing a statistical record of the 56 cases, which have been treated in hospital during the year. It will be seen that our attention has been directed not only to those statistics which relate to parturition, but also to those connected with menstruation and pregnancy: great pains were taken in every case to obtain as correct details as possible on these heads for registry: but as respects the two last, I must own, there is not much reliance to be placed on the statements of the patients themselves. As the commencement of a systematic enquiry, whereof the course of years may rectify the errors, while it will serve to develope the truth, I trust the abstract herewith submitted may be found to have some value hereafter when others are added.

The number of recorded cases at present being so small, I have thought it useless to attempt any deductions from such scanty data, and may therefore only here enumerate the heads under which the information obtained is tabulated in every case.

1st, patient's name—2d, caste—3d, present age—4th, No. of previous labors—5th, date of last confinement—6th, age when catamenia first appeared—7th, date of the last appearance—8th, duration of pregnancy calculated from ditto—9th, presentation and position—10th, duration of labor and stages of ditto—11th, how delivered—12th, sex of

child—13th, placenta, particulars of—14th, results to mother—15th, results to child—and cause of death of child—16th, hemorrhage if any—17th, convulsion if any—18th, puerperal sequela—19th, date of discharge or death.

Of the 56 cases it may suffice briefly to state that there were :

Patients delivered naturally,	50
_____ by forceps, ...	3
_____ by version,	2
_____ by perforation, ...	1

Total, 56

Of the mothers 53 recovered, and 3 only died ; of the children many being premature, or diseased, only 32 lived and 25 died, or were still-born.

I must not omit to mention in this place the successful introduction into our practice of the new anæsthetic agents ether and chloroform ; the latter of which was employed in two cases of operative procedure with perfect safety and success in the presence of several of the professors, and a number of the students. The details of these cases as being more suited to a professional journal than to this report, I have given for publication to Dr. Edlin in his *Register of Indian Medical Science*.

The funds of the Hospital have been enriched by the donation of 500 Rupees, from a benevolent person, who had offered that sum as a prize " to any public institution, which should first bring a human being into the " world without the pains of maternity either by the inhalation of ether, " or by the use of mesmerism."

Professor Jackson was the medium through which this gift was conveyed to me, but was not at liberty to name the generous bestower.

D. STEWART, M. D.

Professor of Midwifery.

(True Copy,)

FRED. J. MOUAT, M. D.

Secretary.

Appendix B. No. I.

Return of Sub-Assistant Surgeons educated at the Medical College.

FORT WILLIAM, MEDICAL BOARD OFFICE, 10TH MARCH, 1848.

Nos.	Names.	Date of Appointment.	Stations to which attached.	Conduct and qualifications.	REMARKS.
1	Omachurn Sett,	22d March 1839, ...	{ Charitable Hospital, Burdwan,	An intelligent steady man.	<p>On leave from 15th December 1847.</p> <p>Attached to the Mesmeric Hospital, Calcutta, during the past year.</p>
2	Samachurn Dutt,	" July, 1841, ...	{ Jubbulpore Govt. Dispensary,	Excellent.	
3	Issurchunder Gangoly, ...	10th Jan'y. 1840, ...	{ Alms House, Midnapore, ...	Conduct good, qualifications superior.	
4	Ramnarrain Doss,	Ditto,	{ Civil Station, Budaon,	Very superior qualifications.	
5	Jadubehunder Sett,	17th Feby.	{ Govt. Dispensary, Barielly, ...	In every way excellent.	
6	Mr. Heving,	23d April 1841, ...	{ Civil Station, Calpee,	No Report received.	
7	Callachand Dey,	20th Jan'y.	{ Bhowanipore Dispensary, ...	Highly talented and attentive.	
8	Rajkisto Chatterjee,	3d Feby.	{ Govt. Dispensary, Ghazee-pore,	Good.	
9	Jadubehunder Dhara, ...	10th ditto,	{ Govt. Dispensary, Allahabad,	Conduct very good, and qualifications of a superior order,	
10	Chimun Lall,	10th ditto,	{ Govt. Dispensary, Delhi, ...	Steady and an intelligent man.	
11	Nobinchunder Paul,	10th ditto,	{ City Hospital, Benares,	Attentive and efficient.	
12	Nilmoney Dutt,	24th ditto,	{ Govt. Dispensary, Pooree, ...	He performs his duties satisfactorily.	
13	Buddenchunder Chowdry,	23d ditto,	Imambarrah Hospital, Hooghly,	No Report received, ...	

Nos.	Names.	Date of Appointment.	Stations to which attached.	Conduct and qualifications.	REMARKS.
14	Moheshchunder Nun, ...	22d June,.....	Govt. Dispensary, Muttra, ...	{ In every respect most satisfactory. Good. No Report received. Good and attentive. Good. Has discharged his duties with a degree of activity and intelligence, which have won him the highest respect from all classes of society.—(Extract of letter of the Govt. N. W. P.) Active and intelligent. Very intelligent and steady, and takes more interest in his duties than formerly. Good. Good. { Zealous and attentive to his duty. Doubtful,	{ Cawnpore Govt. Dispensary, for report by order of the Lieut. Govt. N. W. P.
15	Samachurn Sircar,	16th Feb. 1842, ...	Pilgrim Hospital, Gyah,		
16	Dinonath Dhur,	22d June 1841, ...	Charitable Hospital, Mulnath, ...		
17	Sadaachurn Mullick,	22d ditto,	Govt. Dispensary, Futtyghur, ...		
18	Gopalkisto Goopto,	22d ditto,	Jail and Civil Station, Sirsa, ...		
19	Permanund Sett,.....	17th April 1843,...	Bijnour Jail,	{ Civil Station, Agra,..... Lucknow,	{ Doing duty at the Cawnpore Govt. Dispensary, for report by order of the Lieut. Govt. N. W. P.
20	Mr. F. D'Cruze,	22d February,	Civil Station, Agra,.....		
21	Inayut Hosein,	28th Dec. 1842,...	Lucknow,		
22	Samachurn Dey,.....	22d February 1843,	{ Jail and Civil Station, Loo- dianah,		
23	Chunder Seekur Holder,	Ditto,	{ Jail and Civil Station, Um- ballah,		
24	Tarachand Pync,.....	Ditto,	Govt. Dispensary, Moradabad,	{ Doubtful,	{ Doing duty at the Cawnpore Govt. Dispensary, for report by order of the Lieut. Govt. N. W. P.
25	Govindehunder Doss,.....	Ditto, .....	.....	

26	Purmessur Doss,	10th May,	Jail Goorgaon,	Steady, performs his duty well.	{	Remanded to the Medical College from Dumoh to resume his studies.
27	Moheschunder Dey,	14th Feby. 1843,...	Ganges Canal, Roorkee,	No Report received.		
28	Nabbokissore Goopto, ..	7th Nov. 1843, .....	.....	.....
29	Purmessur Saha,	27th April 1844, ...	Meywar Bheel Corps,	Ditto.	{	Resigned the service on the 22d Nov. 1847.
30	Dhurmodoss Bose,	14th May 1844, ...	Agra Govt. Dispensary,	Moderately active, but is not fit for so responsible a situation as the Agra Dispensary. Has been punctual in his attendance at the Dispensary, and attentive and intelligent,		
31	Mr. E. J. Lazarus,	6th Nov. 1844,	Dacca Govt. Dispensary, ...	.....	
32	Mr. L. DeSouza,	Ditto,	{	Remanded to the Medical College from Shajehanpore, to resume his studies.
33	Hurronauth Mitter,	January 1846,	Burrisaul Dispensary,	No Report received.		
34	Wuzeer Khan,	12th Dec. 1845, ...	Jail Dumoh,	Satisfactory.		
35	Taruck Chunder Lahory, ..	21st August 1846,...	Ganges Canal, Roorkee,	No Report received.	{	Employed by the Rajah of Nuddeah.
36	Dwarkanauth Chatterjee, ..	27th Feby. 1846,...	Ramrec,	Ditto.		
37	Callychurn Lahory, .....	.....	.....	.....
38	Doyalchand Bysack,	2d Dec. 1846,	Jahanabad,	Ditto.	{	Good.
39	Coonjobeharee Chatterjee, ..	.....	Hindoo College and Mudrussa, ..	Ditto.	
40	Tarachand Sen,	8th August,	Jail and Civil Station, Khytal and Ladwa,	Good.		
41	Obhychurn Neughee,	19th September, ...	Jail and Civil Station, Wadnie, ..	Good.	{	Good.
42	Monohur Mookerjee,	16th Jany. 1847,...	Cawnpore Govt. Charitable Dispensary,	Good.		

Nos.	Names.	Date of Appointment.	Stations to which attached.	Conduct and qualifications.	REMARKS.
43	Tameez Khan,.....	30th August,	Bareilly,	Not joined.
44	Buddenath Bromo,	7th July 1847, ...	Govt. Dispensary, Chitragong, Medical College, Female Hospital,	Very Good.	
45	Shushi Bhoosun Seal, ..	.....	With Mr. Williams, Govt. Geologist,	No Report received.
46	Kalynauth Mojundar, ...	29th September, ...	Purnea Dispensary,	Ditto.	Is highly qualified, and conduct most satisfactory.
47	Kadarnath Ghose,	29th July,	Mirzapore Govt. Dispensary, {	Ditto.	
48	Jadubchunder Ghose,	19th August,	Govt. Dispensary, Allahabad, {	No Report received, ...	
49	Tarachunder Banoorjee,...	Ditto,	Shajehanpore,.....	Ditto,	{ Assumed charge of the Allahabad Dispensary, 15th Dec. 1847. Joined 8th Jan. 1848.
50	Kadarnath Dey,	Ditto,	Indore Residency,	Ditto.	
51	Ramsoonder Ghose,	Ditto,	Goruckpore, Charitable Hospital,	Ditto.	
52	Omeschunder Bose,	12th October,	Govt. Dispensary, Dacca,	Ditto,	{ Re-admitted to the service of Govt. Assumed charge of the Dacca Govt. Dispensary, 21st January 1848.
53	Mr. Imlay,	7th July,			

(True Copy.)

FRED. J. MOUTAT, M. D.

Secretary Medical College.

J. FORSYTH, Surgeon,
Secretary Medical Board.

Appendix B. No. II.

Return of Native Doctors educated at the Secondary Class of the Medical College.

FORT WILLIAM, MEDICAL BOARD OFFICE, 10TH MARCH, 1848.

No.	Names.	Date of Appointment.	Corps and Stations to which attached.	Character and qualifications.	REMARKS.
1	Mahomed Hossain,.....	3d Nov. 1841,...	11th Light Cavalry,	Good.	
2	Mahomed Cossim Allee,	Ditto,	Jail and Pilgrim Hospital, Gowaahatty,	Good and ordinary.	
3	Fyzoollah Khan,.....	Ditto,	67h Regt. N. I., Cawnpore,	Both very good.	
4	Ali Bux, (2d,)	Ditto,	11th Regt. Light Cavalry, Feerozepore,	Good.	
5	Bux Khan,	Ditto,	72d Regt. N. I., Kangra,	Attentive and active in all his duties.	
6	Chundee Deen Sukul,...	Ditto,	Garrison of Agra,	In every respect good.	
7	Ali Bux, (1st,)	Ditto,	55th Regt. N. I.,	Both good.	
8	Mozaffer Hossain,	Ditto,	9th Light Cavalry, Mhow,	No report received.	
9	Jellal Ooddeen,	Ditto,	24th Regt. N. I., Lucknow,	Good in every respect.	
10	Shaikh Mungloo,.....	Ditto,	Army Head Quarters, Simla,	No report received.	
11	Udhin Sing,.....	20th June 1842,	4th Light Cavalry, Cawnpore, ...	Good.	
12	Kundy Sing,.....	Ditto,	Mofussil Station of MungleDhye,	Attentive.	
13	Summun Khan,	Ditto,	1st Irregular Cavalry,	Well qualified and attentive.	
14	Hingun, 2d,	Ditto,	8th Irregular Cavalry,	No report received.	
15	Meer Causseem Ally,...	Ditto,	28th Regt. N. I., Lucknow,	Good and attentive.	
16	Cally Persaud,.....	Ditto,	31st Regt. N. I., Camp,.....	Good.	
17	Gholam Rajah,	Ditto,	52d Regt. N. I., Lahore,	Both good.	
18	Meer Gholam Shaw, ...	Ditto,	Jeypore Pol. Agency,	Good.	

Nos.	Names.	Date of Appointment.	Corps and Stations to which attached.	Character and qualifications.	REMARKS.
19	Ghassy Khan,	20th June 1842,	Hawrootee, Political Agency, ..	Conduct disrespectful, and qualifications good.	
20	Meerza Baiker Hossain,	Ditto,	11th Light Cavalry, Ferozepore,	Good.	
21	Quahud Ali,	Ditto,	37th Regt. N. I.,	No report received.	
22	Abdool Wahid,	Ditto,	5th Regt. N. I., Dinapore,	Conduct good and qualifications ordinary.	
23	Shaikh Elahee Bux, ..	22d Dec. 1842, ..	2d and 7th Companies, Sappers and Miners, Lahore,	{ Pretty good, qualifications moderate.	
24	Hedyat Oollah,	Ditto,	45th Regt. N. I., Umballa,	Steady, fair.	
25	Torab Ally,	Ditto,	Civil Station, Baraset,	Conduct good, qualifications sufficient for his duties.	
26	Hingun, (1st),	Ditto,	Sylhet Light Infantry Battalion, Sylhet,	Very good.	
27	Shaik Abdoolah,	Ditto,	Rangur Light Infantry Battalion, Rangur,	Attentive,	This Native Doctor has changed his faith and become a Mus- sulman, assuming the name of Shaikh Ab- doolah, G. O. G. G., 10th Dec. 1847.
28	Seetul Sing,	9th June 1843, ..	2d Assam, Light Infantry Bat- talion, Gowahatty,	Good and superior.	
29	Essory Loll,	Ditto,	Jail, Nursingpore,	Satisfactory.	
30	Ghunsam Singh,	Ditto,	70th Regt. N. I., Boodi Pird, ..	Good.	
31	Khaudam Hossain,	Ditto,	Station Hospital, Darjeeling,	Ditto,	
32	Sooltan Khan,	Ditto,	6th Company 7th Battalion Go- landauze, Lahore,	Impudent.	
33	Bissessor Singh,	Ditto,	Civil Station, Bauliah,	Well behaved, active, and attentive.	

34	Sahabdad Khan,	Ditto,	56th Regt. N. I., Hazeeppore,	Conduct good, qualifications average.
35	Mendy Khan,	22d ditto 1843,...	2d Regt. N. I., Umballa,	Good.
36	Jhoonuck Lall,	Ditto,	Residency Kahnundoo,	Ditto.
37	Amer Khan,	Ditto, .....	.....	No report received.
38	Oozeer Khan,	Ditto,	With a gang of convicts, Bartelly,	Behaves well, qualifications superior.
39	Bhowance Singh,	Ditto,	1st Regt. L. C., Umballa,	Good—fair.
40	Hedyat Ally Khan,	28th June 1844,	Commissioner's Establishment, Gowahatty,	Good and ordinary.
41	Ramdhone,	Ditto,	64th Regiment N. I., Barrackpore,	Good, not very efficient
42	Meer Akbur Ali,	Ditto,	Ex-Ameers of Scinde, Hazareebaugh,	No report received.
43	Hossain Bux,	Ditto,	Civil Station, Maunbhoom,	Attentive, qualifications ordinary.
44	Mirza Hossain Bux, ...	Ditto,	58th Regt. N. I.,	Continuing his study of the English language, and his conduct is satisfactory.
45	Meer Rujub Alic,	Ditto,	No. 10, Light Field Battery, Lahore,	Conduct good, qualifications moderate.
46	Meer Ali Bux,	Ditto,	15th Regiment N. I., Moradabad,	Attentive.
47	Moshaeb Ali,	Ditto,	Camp. 3d Regiment N. I.,	Good.
48	Shaikh Yar Ally,	Ditto,	Jail at Mundlaiser,	Intelligent and attentive.
49	Luchmun Sing, (1st),...	Ditto,	8th Battn. Artillery, Cawnpore,	Good and attentive.
50	Shaikh Matabooddeen, ..	10th April 1845,	6th Company, 8th Battalion Artillery,	No report received.
51	Lall Khan,	Ditto,	1st Regt. N. I., Jullunder,	Good.
52	Shaikh Meah Jan,	Ditto,	Head Quarters, 4th Company, 6th Battalion Artillery, Jullunder,	
53	Shaikh Emam Ally, ...	Ditto,	45th Regt. N. I., Umballa,	“ Reiterated culpable misconduct.” Steady—fair.

Nos.	Names.	Date of Appointment.	Corps and Stations to which attached.	Character and qualifications.	REMARKS.
54	Shaikh Ilahee Bux, (1st.)	10th April 1845,	Sylhet Light Infantry Battalion, Cherra,	Very good.	
55	Doorga Churn Lall, ...	Ditto,	13th Regt. Irregular Cavalry, Mukhoo,	Highly satisfactory.	
56	Shaikh Hossein Ally, ...	Ditto,	Under Captain Hill, T. Survey,	No report received.	
57	Shaikh Khoda Buksh, ..	Ditto,	12th Regt. N. I., Allyghur,	Ditto.	
58	Punna Lall,	Ditto,	With G. G. Agent, Doorundah,	Qualifications good, conduct not satisfactory.	
59	Ulleef Khan,	Ditto,	Arracan Local Battalion,	No report received.	
60	Ramsahee Lall,	Ditto,	Jail Hospital, Mirzapore,	Well qualified.	
61	Mahomed Khan,	Ditto,	Civil, Hazareebaugh,	Good.	
62	Shaikh Warris Ally, ...	23d Jan. 1846, ...	4th and 5th Company, Sappers and Miners, Dongshai,	Attentive and intelligent.	
63	Ushruf Ally Khan,	Ditto,	2d Hill Rangers, Kangra,	Good.	
64	Shaikh Abdoolah,	Ditto,	Huriana Light Infantry Battalion, Hansee,	Ditto.	
65	Meer Akhur Ally,	Ditto,	4th Regt. Sikh Local Infantry, Loodianah,	Ditto.	
66	Syud Mahomed Wahud Ushruff,	Ditto, .....	.....	No report received.	
67	Wuzeer Khan, (1st.) ...	Ditto,	6th Regt. Light Cavalry, Fez ozeopore,	No report received.	
68	Khosal Ram,	Ditto,	Jail Hospital, Agra,	Tolerably attentive.	
69	Meer Bundah Ally, ...	Ditto,	Civil Station, Futehghurh,	Good.	
70	Shaikh Lall Mohomed, ...	Ditto,	74th Regt. N. I., Mhow,	Good and qualifications indifferant.	
71	Wuzeer Khan, (2d.) ...	Ditto,	19th Regt. N. I., Nagode,	Conduct good, qualifications fair.	

72	Shaikh Ruheem Buksh,	Ditto,	Jail Hospital, Sirsa,	Satisfactory.	
73	Choonee Lall,	Ditto,	14th Regt. Irregular Cavalry, Hansi,	No report received. Good.	
74	Shaikh Souban Ally,...	Ditto,	3d Light Cavalry, Muttira,	Willing and attentive to his duties.	
75	Shaikh Nubbee Buksh,	Ditto,	Station Staff Hospital, Umballa,	Good.	
76	Shaikh Eman Ally, ...	Ditto,	Civil Station & Jail, Hurianpore,	No report received.	
77	Nuck Chadee Singh, ...	Ditto,	11th Irregular Cavalry, Feroze- pore,	Good.	
78	Abdool Sunnud,	Ditto,	1st Regt. Inv. Bn. Hurianpore,...	Both good.	
79	Hingun Khan,.....	Ditto,	G. G. Body Guard, Deyrah,.....	Both good.	
80	Baboo Ram,.....	Ditto,	3d Company, 7th Battalion Ar- tillery, Delhi,	Good.	
81	Luehmun Singh,.....	Ditto,	Commissioner and Superintendent, Sutlege States,	Good.	
82	Jowahur Lall,.....	Ditto,	Jail Hospital, Wudhie,	No report received,.....	Jail abolished : doing duty with Commis- sioner's Escort.
83	Shaikh Ali Busksh, (1st,)	Ditto,			
84	Fyzoollah Khan,.....	Ditto,	Nusseeree Rifle Bn. Intog,	Very sharp and intelligent.	
85	Shaikh Faqueer Moho- med,	Ditto,	34th Regt. N. I., Agra,	Excellent, intelligent and at- tentive.	
86	Wuzeer Allie Khan, (3d,)	Ditto,	37th Regt. N. I.,	No report received.	
87	Meerza Nourooz Beg,...	Ditto,	72d Regt. N. I., Kangra,	Attentive.	
88	Meer Hyder Allie,.....	Ditto,	Regt. of Loodianah,	Fair and tolerable.	
89	Shaikh Alie Mahomed,	9th April 1847,	23d Regiment N. I., Phillore, ...	Good.	
90	Sunt Persaud Sing,.....	Ditto,	K. L. Bn., Lohorghaut,	Satisfactory.	
91	Shamut Oollah,	Ditto,	Corps of Sappers and Pioneers, Loodiana,	Good and satisfactory.	
92	Ushruff Allie Khan, ...	Ditto,	Station Staff Hospital, Meerut,...	Steady, willing, attentive.	

Nos.	Names.	Date of Appointment.	Corps and Stations to which attached.	Character and qualifications.	REMARKS.
93	Mirza Ramzan Allie,...	9th April 1847,	1st Regt. Light Cavalry, Umballa,	No report received.	
94	Ameer Khan,	Ditto,	2d Regt. N. I. Gars. Umballa,	Ditto.	
95	Meer Enayut Allie,....	Ditto,	Station Hospital, Dinapore,	Good.	
96	Pursun Loll,	Ditto,	Nussere Rifle Battalion Inty,	Intelligent, but inexperienced.	
97	Shaikh Ali Buksh,	Ditto,	50th Regt. N. I., Lahore,	Good.	
98	Meer Enayut Hossein,	Ditto,	11th Regt. Light Cavalry, Fe-rozepore,	Ditto.	
99	Shaikh Mahomed Hossein,	Ditto,	2d Regt. Irregular Cavalry, Mukhoo,	No report received.	
100	Shaik Kurreem Udin,...	Ditto,	2d Regt. Sr. Bu. Kangra,.....	Good.	
101	Shaikh Mahsoom,	Ditto,	40th Regt. N. I., Khyook Phyoo,	Ditto.	
102	Shaikh Kulleem Oollah,	Ditto,	39th Regt. Dinapore,.....	No report received.	
103	Shaikh Soopum,	9th April 1847,	60th Regt. N. I., Barrackpore,...	Ditto.	
104	Shaikh Kurreem Buksh, (2d.)	Ditto, ...	Station of Mussorree,.....	Satisfactory.	
105	Shaikh Emam Allie, ...	Ditto,	48th Regt. N. I., Benares,.....	Ditto.	
106	Wuzeer Alie Khan,.....	Ditto,	Doing duty with 63d Regt. N. I.,	No report received.	
107	Lalla Ramydyl,	Ditto,	40th Regt. N. I., Chittagong, ...	Very good.	
108	Shaikh Torab Allie, ...	Ditto,	Civil Hospital, Akyab, .....	.....	Under suspension.
109	Shaikh Abdool Ajuz,...	Ditto,	Civil Station, Jessore,	Very good.	

(True Copy)

J. FORSYTH, Surgeon,
Secretary Medical Board.FRED. MOUNT, M. D.,
Secretary Medical College.

Appendix B. No. III.

Report of the conduct and character of Ceylon Sub-Assistants educated in the Bengal Medical College.

Nos.	Names.	Remarks on conduct and character by the Medical Officer under whom each individual served.
1	Mr. H. Toussaint,	<p>I have much pleasure in certifying to the uniformly good conduct of Medical Sub-Assistant Mr. Toussaint : he continues to display zeal in the discharge of his duties, and I have to express my perfect satisfaction as to the correct manner in which these duties are performed by him.</p> <p>(Signed) T. R. DYCE,</p> <p><i>Superintendent of Vaccination.</i></p>
2	Mr. J. Wambeck,	<p>Mr. Wambeck continues to fulfil the expectations formed of him early in his career in the Medical Department of this Island : and his respectful and decorous demeanor towards his superior officers adds to the interest felt in his success. He performs his duties with zeal and untiring assiduity, seizing on every opportunity of acquiring professional knowledge. In the course of the past year, he performed in a very masterly manner an amputation of the arm, exhibiting sound practical knowledge with much manual dexterity, and continues to conduct chemical researches into the nature of such substances as have demanded careful examination in medico legal investigations, most satisfactorily for the public interests. I cannot speak too highly of this officer's character and conduct.</p> <p>(Signed) R. TEMPLETON,</p> <p><i>Superintendent of Vaccination.</i></p>
		<p>I have found Medical Sub-Assistant Mr. John Wambeck universally attentive during the past year. Of his abilities I have already spoken, so that it may be unnecessary to repeat that they are such as reflect great credit upon him, being improved by constant application.</p> <p>(Signed) J. M. GRANT, M. D.,</p> <p><i>Staff. Asst. Surgeon, in charge of Medical Store.</i></p>

Nos.	Names.	Remarks on conduct and character by the Medical Officer under whom each individual served.
3	Mr. J. Loose,	<p>Mr. J. Loose is improving in knowledge of his profession, and on the whole his conduct has been satisfactory. (Signed) R. TEMPLETON,</p>
4	Mr. C. Kriekenbeck, ...	<p>I have every reason to be satisfied with the manner in which Mr. Kriekenbeck discharged his duties during the time he was under my superintendence. (Signed) T. R. DYCE,</p>
5	Mr. P. D. Anthoniz, ...	<p>I have the honor to state that Sub-Assistant Anthoniz left this station in February last, but that I have every reason to entertain the same favorable opinions respecting him as were expressed in my letter of the 23d February 1846. (Signed) J. C. CAMERON, M. D.,</p>
6	Mr. H. Dickman,	<p>I have the honor to state that since the date of my last report, the professional and general conduct of Medical Sub-Assistant Dickman has continued to give me the greatest satisfaction, and that I consider Mr. Dickman in every way a most respectable member of the Colonial Medical Department. (Signed) J. C. BEATSON, M. D.,</p>
7	Mr. J. Hollowell,	<p>As regards Mr. Hollowell I regret to say that he was generally dilatory in forwarding his official returns, and that in his letters addressed to his superiors, a manifest tendency to insubordination and disrespect was evinced. Of his talents and acquirements, I had no opportunity of judging, he being stationed at a distance from Kandy. On the whole I conceive that he did not perform his duties in a satisfactory manner. (Signed) J. EWING, <i>Surgeon, 95th Regiment.</i></p>

Medical Sub-Assistant Hollowell has performed his Medical duties with the 2d Division of Pioneers to my satisfaction, and I have much pleasure in adding that his style of official correspondence has been of a more respectful character than when I had last an occasion to report on this individual.

(Signed) A. FERGUSON, M. D.,

Superintendent of Vaccination.

With the conduct, &c. &c., of Medical Sub-Assistant Pyster, I was perfectly satisfied.

(Signed) J. EWING,

Surgeon, 95th Regiment.

Medical Sub-Assistant Pyster's conduct has been good during the whole period, he has been stationed in the Kandyan Province, and that I have no reason to state otherwise than that he appears to have evinced both talent and zeal in discharge of his duties, and has consequently performed his duties to my entire satisfaction.

(Signed) A. FERGUSON, M. D.,

Superintendent of Vaccination.

Mr. L. Wijesinghe suffered from fever severely during the early part of the year, and during this period became so inattentive and careless as to subject himself to repeated reprimands: latterly, however, I have had little grounds for dissatisfaction, and the reports which have reached me from private channels speak of him as having enjoyed a high reputation amongst the Civil Servants and the community generally, for medical skill and kind and unassuming demeanor towards those whom he was either officially or professionally brought in contact. I consider him a good Medical Officer.

(Signed) R. TEMPLETON,

Superintendent of Vaccination.

8 Mr. C. E. Pyster,

9 Mr. L. Wijesinghe,

Nos.	Names.	Remarks on conduct and character by the Medical Officer under whom each individual served.
10	Mr. W. C. Ondaatjee, ...	<p>Mr. W. C. Ondaatjee rejoined the Department lately, and would become a respectable member of the department, with a little more zealous attention to his duties, and somewhat less slovenliness in the manner in which his records are kept and his returns made out and forwarded.</p> <p>(Signed) R. TEMPLETON, <i>Superintendent of Vaccination.</i></p>
11	Mr. L. A. Phillipsz, ...	<p>It gives me pleasure to be enabled to state that I found Medical Sub-Assistant Phillipsz, whilst under my charge for a short period in the Ceylon Rifles Hospital at Colombo, very attentive to his duties, zealous in the discharge of them, and shewed a practical knowledge in the treatment of diseases.</p> <p>(Signed) JAMES STUART, <i>Surgeon,</i> <i>Ceylon Rifle Regt.</i></p>

(True Copies)

FRED. J. MOUAT, M. D.

Secretary Council of Education.

15th March, 1847.

Appendix C. No. F.

General Orders by the Hon'ble the President of the Council of India in Council.

Fort William, 25th June, 1847.

No. 200 of 1847.—The Hon'ble the President in Council, with the concurrence of the Right Hon'ble the Governor General of India, is pleased to publish the following regulations, for the future admission to the service of Candidates for Apprenticeships in the Bengal Subordinate Medical Department, the selection of Apprentices for Studentships in the Medical College, and the examination, previous to promotion of Members of the Department generally; the operation of such of the rules as have reference to the admission of Apprentices to the Medical College, and their management during their stay there, being however suspended for the present.

1. No candidate for an apprenticeship in the Subordinate Medical Department shall be admitted below 14 or above 18 years of age.

2. Candidates will be required to produce in the first instance certificates of parentage and age, and satisfactory testimonials of good character, before they can be deemed eligible for preliminary examination.

3. Candidates must be of healthy constitution and physically fit for the active duties of the service.

4. Candidates must be prepared to undergo an examination before a Committee composed of two medical officers and a passed interpreter respecting their knowledge of the English language generally, including orthography, the meaning of words, writing from dictation, simple arithmetic as far as the rule of three, and a colloquial knowledge of Hindoostanee.

5. The number of vacancies in the Department will be notified in General Orders, Commander in Chief, three months prior to the holding of the examinations which will take place on the 15th April and 15th October of each year, at the several Head Quarter Stations of the Divisions of the Army. The proportion of candidates for examination at each Station, to be regulated by the number of vacancies.

6. Passed candidates for admission to the Department must serve two years in the grade of apprentice in the Hospital of a European Regiment, or in the General Hospital at the Presidency, and during that period have given proofs of general good conduct and readiness to qualify themselves for the performance of their duties, otherwise they will not be considered eligible for a studentship in the Medical College.

7. The apprentices so qualified, who may be selected by the Medical Board for studentships in the Medical College shall be required to quit their Stations in the Upper Provinces at such time, as to admit of their arriving at the Presidency before the opening of the College Session on the 15th June.

8. On arrival at the Presidency the apprentices will immediately report themselves at the Office of the Medical Board, where they will be furnished with a letter to the Secretary to the Medical College, who will enrol their names on the College books, and from that date, until the completion of their two years' study, they will consider themselves entirely under the control of the College authorities, and subject to all the regulations of the Institution.

9. The salaries of the student apprentices will be drawn in the abstract of the Secretary of the Medical College, and the expenses of

lodging within the College bounds, victualling, clothing, and providing class books, will be defrayed out of that salary, under the authority of the College Council.

10. The course of education in the College, as sanctioned by the Hon'ble the Court of Directors during those two years, will comprise the teaching of Anatomy, Dissection, Materia Medica, Pharmaceutical Chemistry, the practice of Medicine and Surgery, and more especially Clinical instruction in connection with the two last branches.

11. If at the periodical College examinations held by the Professors of the Institution, the student apprentice shall fail to shew satisfactory progress, and willingness to profit by the instruction afforded, he will be removed at once from the College and the service, on the recommendation of the Council.

12. At the expiration of their two years' study, the student apprentices will undergo an examination by the Professors of the College, and three assessors selected under the orders of Government, from the number of Medical Officers serving at the Presidency, and on their affording proof of proficiency in the branches above noted, they will be drafted to European Regiments, or to the General Hospital at the Presidency, there to await their turn for promotion as Assistant Apothecaries or Assistant Stewards.

13. In future all subordinate Medical Officers shall be subjected to a searching examination previously to promotion in the Department. No apprentice shall be promoted to the rank of Assistant Apothecary or of Assistant Steward, and no Assistant Apothecary or Assistant Steward shall be promoted to the higher grades of the Department, who cannot produce satisfactory testimonial of good character, and afford proof on examination by a Committee of three Medical Officers belonging to European Corps, of continued proficiency in the above branches of professional knowledge.

14. Respecting those of the subordinate medical department, who may not have had the advantage of previous scholastic instruction, the committee of medical officers in preparing the questions to be answered by them, will be guided by the opportunities which the parties may have enjoyed of acquiring professional knowledge. It will be indispensable that they shall possess an entire acquaintance with all Returns and Reports and Indents required in the apothecary and stewards' departments, a set of which in their own hand-writing they should produce before the committee, and in short, under no circumstances shall any individual of the department be passed for the superior grade, unless found sufficiently qualified for every duty which, from his position in the public service, he may be required to perform.

W. M. N. STURT, *Major,*
Offg. Secy. to the Govt. of India, Mily. Dept.

Appendix C. No. II.

Regulations for the Pupils of the European Subordinate Medical Department.

1. The pupils of the Subordinate Medical Department shall be under the immediate and sole control and superintendence of the Secretary to the Medical College, in all matters relating to internal economy and discipline.
2. They shall be formed into a mess, which shall also be under the control of the Secretary, and of which the accounts shall be kept in the office of the College. The Government allowance for servants, &c. shall in no case be permitted to be exceeded.
3. The more immediate management of the mess and regulation of the conduct of these pupils shall be entrusted to the European Staff Serjeant allowed for the purpose, who shall reside in the same building with them, perform the duties of Steward, and furnish a daily report *in person* to the Secretary, according to a form which will be provided for the purpose.
4. The pupils shall wear the uniform of the department to which they are attached, and be subjected to strict Military discipline.
5. They shall at all times appear properly dressed at meals and lecture, be quiet and orderly in their demeanour, and avoid the use of oaths and obscene or improper language.
6. The attendance at roll call, in hospital, and on the lectures ordered by Government, shall be subject to the same rules and regulations as for other students.
7. No friends of the pupils shall be allowed within the College compound after 9 P. M., nor shall noise of any description be permitted at any time, which is improper and likely to disturb the patients in the hospital, and other persons residing within the compound.
8. Any visitors found guilty of creating disturbances shall at once be expelled from the compound, and not admitted again, and any pupil convicted of introducing persons of bad character and conduct, shall be reported to the Council of Education for such punishment as may be deemed deserved for a practice which is so prejudicial to good order and discipline.
9. No person shall be allowed to sit about the door of the house, or on the roads of the compound.
10. No parties of any kind shall be allowed without special permission being obtained, and the names and residence of all the guests being furnished to the Secretary, as well as the names of the persons inviting them, as a guarantee for their propriety of conduct, and to ensure their punishment in case of infringement of the rules of the College.
- No students shall absent themselves from roll call without obtaining written permission from the Secretary, in which the cause of the absence shall be specified and filed for record.
11. The roll of the pupils of the Subordinate Medical Department will be called every morning and evening, at hours which will be fixed according to the season of the year.
12. The European Staff Serjeant shall be under the direct and immediate control of the Secretary, from and through whom he shall receive all his orders, and to whom he is on all occasions to yield the most implicit obedience.
13. All pupils must attend Divine Service at least once every Sunday, at the place of worship of the persuasion to which each may belong.

FRED. J. MOUAT, M. D., *Secretary.*

Appendix D. No. I.

Programme of the Annual Final and General Examinations of the English and Military Classes of the Medical College of Bengal.

SESSION 1847-48.

DAYS.	ENGLISH CLASS.		MILITARY CLASS.		REMARKS.
	Final Examination.	General Examination.	Final Examination.	General Examination.	
Wednesday, March 15,	Written in Medicine and Surgery,	Materia } Medica, .. }	The practical examinations of the anatomical classes of both departments will, in consequence of the heat of the weather and the termination of those courses, commence on Monday, the 28th, and be continued on Mondays, Wednesdays and Fridays, until completed. The practical examination of the Surgical class of the English Department will commence on Tuesday, the 29th February, at 11 A. M. In all other respects the examinations will be conducted upon the plan published in Appendix D. Nos. 1 and 2, of the report of 1846-47.
Thursday, ditto 16,	No examination,	Medicine, .. }	Surgery, ..	... ..
Friday, ditto 17,	Practical Anatomy and Surgery,	Botany, ... }	Materia Medica, ...	... ..
Saturday, ditto 18,	Anatomy and Physiology, (<i>viva voce</i>)	Surgery, ... }	Medicine,	Materia } Medica, .. }	

	No examination,.....	Midwifery,	The anatomical examinations will be conducted in the dissecting room by the Professor of Anatomy for as many days as may be found necessary, beginning on Monday, the 28th of February, for the reasons mentioned in the column of remarks,	Anatomy and Physiology for as many days as may be found necessary.
Monday, ditto 20,				
Tuesday, ditto 21,	Chemistry,...	Anatomy and Physiology : written paper,...	...	...
Wednesday, ditto 22,	Botany,.....	Medical Jurisprudence,....	...	...
Thursday, ditto 23,	No examination,.....	Chemistry,...	...	...
Friday, ditto 24,	Medicine,...	...	...	...
Saturday, ditto 25,	Surgery (viva voce,)..	...	...	...
Monday, ditto 26,	No examination,.....	...	...	...
Tuesday ditto 27,	Midwifery,...	...	...	...
Wednesday, ditto 28,	Medical Jurisprudence,.	...	...	...
Friday, ditto 30,	Materia Medica, .....	...	...	...

FRED. J. MOUNT, M. D.
Secretary Medical College.

Medical College, the 24th February, 1848.

Examination Questions.

FINAL STUDENTS.

1. What is hernia? At what points of the abdominal parietes does hernia most commonly take place, and what is the name applied to each particular protrusion? What are usually considered the active and passive causes of abdominal hernia? How is hernia formed, and what are generally its contents? What is irreducible hernia, and how does it become irreducible? What is strangulated hernia, and what are the ordinary causes of strangulation?

Mention the diseases with which inguinal hernia may be confounded.

What are the varieties of inguinal hernia, and how are they produced?

Describe minutely the anatomy of the parts concerned in inguinal hernia, from within outwards. What are the symptoms of strangulated inguinal hernia?

Detail at length the various measures you would adopt for its relief before having recourse to operation, and mention the symptoms, the presence of which would induce you to perform the operation without delay?

Describe the several steps of the operation for a strangulated inguinal hernia of moderate size, and the dangers to be guarded against from first to last, in using the knife or bistoury. In what direction and to what extent would you cut, when you have reached the seat of obstruction?

What is the next step after the obstruction is removed, supposing the contents of the sac to be sound? What is the appearance of those contents when unsound, and how would you proceed when they are so?

The immediate object of the operation having been successfully attained, what are the dangers to be subsequently apprehended, and the measures you would adopt to counteract them?

2. What is the nature of a gun-shot wound, and the ordinary treatment of such when no very urgent symptoms are present? Is it absolutely necessary in all instances to remove at once a ball, or any other foreign body, or is it proper to dilate the wound with a knife for that or any other purpose?

When it occurs in one of the extremities, what are the circumstances that would induce you to amputate the limb without delay? Should inflammation have already set in when you first see the wound, would you operate at once, or how long and for what particular change would you delay to amputate?

Should a musket-ball wound or sever a considerable branch of the artery in passing through a limb and the consequent hemorrhage be urgent, detail the measures you would adopt to arrest the bleeding?

3. Detail the symptoms of dysentery, its causes, and its pathology.

Describe the treatment most appropriate in the acute stage, and that best adapted to the chronic form of the disease.

General Examinations.

ANATOMY AND PHYSIOLOGY.

1. Describe the knee joint ?
2. Describe the surgical anatomy of the femoral artery and its branches ?
3. If a needle pass through the globe of the eye, entering at the centre of the cornea, what structures will it pass through ?
4. Describe the parts of inguinal hernia ?
5. Give the relations of the œsophagus in its whole course ?
6. Give the anatomy of the pneumogastric nerve ?
7. Give the physiology of the pneumogastric nerve ?
8. What are the forces employed in the circulation of the blood ?
9. Name all the muscles in the upper extremity ?

CHEMISTRY.

1. Give the processes for procuring bromine ; the theories of them ; the characters of this substance ; the more important compounds into which it enters ; and their composition ; and the tests by which it is detected ?
2. State the processes for preparing iodine ; the theory of these ; its tests ; the acids which it forms with other simple bodies, and their composition ?
3. Detail the several processes for preparing iodide of potassium, the theories and respective advantages and disadvantages of these ; state also some of the most striking instances of the uses of this substance as a test ?
4. State the theory and results of the changes, which take place when iodide of potassium and acetate of lead are mingled ?
5. Give the process, and the theory of it, for preparing cyanogen, its composition, and distinguishing properties ?
6. Give the processes for preparing ferrocyanide of potassium, the theories of them, the precautions necessary to ensure success, and the composition and properties of that salt ?
7. What is ferridcyanide of potassium, and how prepared ; what is its appearance as contrasted with that of the ferrocyanide, and what are the different actions of these two salts in regard to salts of the protoxide and peroxide of iron ?
8. Give the tests of copper in solution ?
9. Give the process, and its theory, for preparing oxalic acid ?
10. Give the process, and its theory, for preparing tartaric acid ?

SURGERY.

1. What are the symptoms of stone in the bladder ? What diseases may be mistaken for stone. How could you know positively it was or was not stone ?
2. Supposing a person to receive an injury producing insensibility, in which state he lingers for six or seven hours, and then dies comatose, there being no marks of violence on any part of the head or body.

Under these circumstances what would you say was the most probable cause of death? What would you expect to find on making a post mortem examination?

3. What are the different causes of retention of urine? How are they to be treated respectively?

4. In case of wound of the deep palmar arch, what would you do to stop the hemorrhage?

5. If a man who got a fall complains of pain in the region of the hip joint, and on comparing the two limbs one *appears* to be shorter than the other, and there is great stiffness of the affected limb, what would you do to satisfy yourself as to the nature of the injury? What treatment would you have recourse to?

6. Would you return the contents of the hernial sac always and under all circumstances, after dividing the stricture? Detail the circumstances in which it would be impracticable or inadvisable to do so.

MIDWIFERY.

1. What organs are concerned in the function of menstruation, and what is the nature and extent of the influence exercised by each?

2. Describe the placenta, its development, structure, and function?

3. Describe the symptoms, progress, and completion of the most common case of natural labor?

MEDICAL JURISPRUDENCE.

1. Detail the diseases which are liable to be mistaken for irritant poisoning, and the means of distinguishing them from one another?

2. Under what circumstances may spontaneous perforation of the stomach occur, and how would you distinguish it after death from solution or corrosion of the coats of the organ by a caustic alkali, or a mineral acid?

3. The symptoms, post-mortem appearances, and treatment of poisoning by arsenious acid, with its *modus operandi*.

4. The tests for arsenious acid, with the objections to and fallacies of each.

5. Detail the diseases, which simulate and may be mistaken for narcotic poisoning, with the differences between them?

6. The symptoms and post-mortem appearances caused by poisonous doses of alcohol and opium, with the means of distinguishing the one from the other, and both from concussion or compression?

7. The treatment of poisoning by alcohol and opium?

MATERIA MEDICA.

1. In what inflammatory diseases, and under what circumstances, would mercury, given so to affect the mouth, be admissible and advisable? How would the existence of syphilis, serofula, local malignant disease, or spleen affect its use?

2. Enumerate the various anæsthetic agents now employed to produce insensibility to pain; specify the proper means of applying them, their probable mode of action, the circumstances under which their use is contra-indicated, and the means of dispelling the effects of an over-dose.

3. Detail the various remedies employed in the treatment of dropsical affections—the special form for which each is best adapted, with its mode of exhibition, dose, and usual combinations.

4. The medicinal uses and doses of tartar emetic, aconite and its alkaloid, strychnine, and arsenious acid.

5. The treatment of chronic dysentery with a detail of the nature, properties, sources, modes of preparation, combination, exhibition, and doses of each of the remedies mentioned.

6. The preparations, uses, and doses of nitric acid.

PRACTICE OF PHYSIC.

1. Give some definition of what is meant by disease? what is meant by epidemic, endemic, and sporadic diseases? Under which head ought small pox and intermittent fever to be classed?

2. What are the changes which the blood undergoes in disease—and specify the admixture of substances which are not found in the blood in a state of health.

3. Give the symptoms of remittent fever, the plan of treatment, and the mode in which death takes place.

4. What are the several causes of paralysis and the treatment?

5. What are the symptoms of pneumonia—what are the auscultatory signs corresponding with the changes in the lungs, and what the plan of treatment.

BOTANY.

1. Describe the descending and ascending axes, and the difference between dicotyledonous and monocotyledonous structure.

2. Describe a simple ovary.

3. Describe a compound ovary.

4. Describe a simple leaf.

5. Describe a compound leaf.

6. Describe the stamens in Malvaceæ.

7. Describe the stamens in Tiliaceæ, and state the class to which Malvaceæ and Tiliaceæ belong.

8. Describe the class to which Scitamineæ belongs, and the difference between that family (i. e. Scitamineæ) and Marantaceæ.

R E P L I E S
OF THE
MOST PROFICIENT STUDENTS.

The replies are reprinted verbatim from the MSS. of the students, every error of grammar and fact being retained.

Readers in Europe must remember that the answers of the native students are not only written in a given time, but also in a foreign language, with which none of them are very intimately acquainted when they commence the study of medicine, —the standard of preliminary acquirement being, for many reasons, lower than could be wished.

Appendix D. No. III.

REPLIES OF FINAL STUDENTS.

1. Hernia is the protrusion of any viscus from its natural cavity,—its most common situation is at the lower and internal part of the abdomen at the inguinal ring, and then it is called *inguinal* hernia—it also takes place at what is termed the *femoral* ring, and then constitutes *femoral* hernia. Hernia besides being named from its situation also receives particular names from its contents—*enterocele*, when intestines, and *epiplocele*, when omentum is the protruded part; and *entero-epiplocele* when the hernial contents are both intestines and omentum.

The *active* causes of hernia may be said to be any great strain or muscular effort which calls the abdominal muscles into great, continued, and violent action, such as the act of parturition, or straining at stool, whether in dysentery or from other causes.

The *passive* causes are, unusual and abnormal relaxation of the muscular system, and debility; the previous occurrence of the same disease may also be considered a passive cause.

Hernia is formed, as above stated, by the protrusion of some portion of the abdominal contents, carrying before it a pouch of peritoneum, which becomes its sac; its contents may be intestines, omentum, or both, as before mentioned—these are the most common and ordinary portions of the abdominal contents protruded. An irreducible hernia is that which is incapable of being returned into its natural position; and it usually becomes of this nature by a slight degree of inflammation taking place, producing adhesion between the sac and neighbouring parts, and between the sac and its contents; or it may be rendered irreducible by more folds of intestine, or omentum, passing down and thereby preventing reduction; or by accumulated feces, the presence of gas, &c., these latter, however, are generally said to form an incarcerated hernia: strangulated hernia is that which is not only not reducible, but one in which a degree of constriction takes place interfering with and ultimately altogether interrupting its natural function, and preventing the flow of blood to and from the part, whereby inflammation of the highest degree is set up, producing gangrene of the strangulated part. The ordinary causes of strangulation are constriction at the neck of the sac produced by inflammation, the descent of a greater quantity of bowel or omentum, rendering reduction impossible, and causing strangulation, the additional protrusion becoming locked in the neck or narrowest portion of the sac, and by its pressure producing this result; the accumulation of gas or feces, &c.

Inguinal hernia is divided into the *oblique* and the *direct*—the former, when the hernia follows the course of the inguinal canal, the latter when it passes directly through the external abdominal ring. The principal diseases with which hernia may be confounded are, hydrocele of the tunica vaginalis, hydrocele of the cord, varicocele of the cord, cirsocele, sarcocele, &c. The parts concerned in hernia:—in the descent of the testicle a pouch of peritoneum, and also of the transversalis fascia is carried before it; that opening in the fascia where the cord pierces to pass downwards is termed the internal abdominal ring, it is infundibuli-

form or funnel-shaped, and is formed by the transversalis fascia alone. The cord then transverses an oblique canal in its way to the scrotum; this canal is termed the inguinal canal, it is separated from the peritoneum by the fascia beforementioned, and also by the "conjoined tendon" below; anteriorly and superiorly it is covered by some of the fleshy fibres of the internal oblique and transversalis muscles; lower down by the external oblique tendon alone; besides these, you have the superficial fascia and skin, covering it throughout its extent. The lower termination of this canal is called the external abdominal ring—this opening is formed by the separation of the tendinous fibres of the external oblique; it is triangular in shape, the apex above, the base below at the symphysis pubis—its two edges or sides are called *pillars*; one of these is anterior, superior, and external, the other is posterior, inferior, and internal; at and above the apex of this mis-termed ring, tendinous fibres of a semi-lunar form pass across, originating from Poupart's ligament—having their convexities directed downwards, i. e. towards the ring; these fibres serve to strengthen it above, and prevent splitting upwards of the tendon—from their situation they are called the intercolumnar bands; the external pillar is inserted into the crest and spine of the pubis, the fibres of the inner one cross and interlace with that of the opposite side upon the symphysis pubis, into which they are inserted.

Immediately behind the external abdominal ring, the "conjoined tendon" is placed, and it serves as a protection to abdominal protrusion taking place in that situation; this tendon is formed by the union of the tendons of the internal oblique and transversalis muscles. The coverings, then, of an oblique inguinal hernia at the external abdominal ring, are the skin, superficial fascia, Searpa's fascia, which is nothing more than a deep layer of the superficial fascia, Camper's fascia, or that formed by the intercolumnar fascia, the cremaster muscle, the fascia propria, and the peritoneal sac.

I do not consider it necessary to give the origin and insertion of the various muscles, &c., nor do I think the question demands it.

The *symptoms* of strangulated hernia are, arrest of the function of the part, the feces cannot be voided, the bowels are costive; a sense of constriction, tension, and pain in the part, the skin becomes red, smooth and shining, the part becomes exquisitely tender, a feeling of faintness, nausea and vomiting, great restlessness and anxiety; with all this there is more or less fever, and a quick pulse; the skin ultimately becomes cold and covered with a clammy perspiration, the pulse becomes feeble and even intermitting, vomiting of a stereoraceous substance, a doughy and inelastic feel in the part, hiccough, cessation of pain, and a feeling of relief, close the scene.

The measures to be adopted for the relief of strangulation are the taxis and the application of cold: the surgeon having placed the patient in a recumbent posture, with the knees flexed and drawn upwards towards the abdomen, grasps the tumour with his right hand, and by steady, firm, and yet gentle pressure, endeavours to force the contents into the abdomen, the left fore-finger and thumb being placed at the external ring, and a sort of kneading motion being kept up to facilitate return; having failed in this he may resort to tartar emetic and the warm-bath to aid reduction, and while the patient is in the bath, the taxis must be resumed; this proving unsuccessful, he may have recourse to general bleeding, and even the dangerous tobacco injection; but perhaps all these may now be superseded by the ether and chloroform, so useful in producing relaxation and overcoming spasm.

The cold should be applied by means of ice placed in a bladder and kept continuously to the part; this, by causing a shrinking of the parts, may effect speedy reduction.

All these means proving abortive, the operation should be at once performed. The symptoms that would induce you to operate without delay, are the period of existence of the strangulation, the presence of stercoraceous vomiting, hiccough, sudden cessation of pain, great restlessness and anxiety, a cold clammy skin, a feeble pulse, &c.; these plainly indicating that no time ought to be lost.

The operation, being decided upon, should be commenced by an incision about three inches long from the external ring, over the tumour; some recommend a fold of skin to be pinched up by the hand, which is to be transfixed by the knife and allowed to cut its way out; this is by far the safer plan of the two: the first incision, in whatever way made, should divide the skin and a layer of the superficial fascia; a small cut is then made into the deeper layer, and for the sake of safety, a director is introduced and the fascia divided upon it by a knife or bistoury; in the same way the cremasteric, Campers, and the fascia propria are divided, until we come to the sac itself: the finger is then passed up to ascertain the seat of constriction, a small opening is then made into the peritoneal pouch, the constricted portion slightly notched or limitedly cut, either directly upwards, as Sir Astley Cooper recommends, or upwards and inwards, or upwards and outwards, according to the kind of hernia; the escape of a clear serous fluid indicates that the peritoneal sac has been divided: this being completed the protruded portion is examined to find whether adhesions, feces, &c., will prevent its return: this not being the case the contents of the sac are gradually insinuated into the abdomen. The dangers to be guarded against are division of the internal epigastric artery, and wounding of the peritoneum and intestines; sometimes the obturator artery, when its origin is unusual, passes across the neck of the sac and is apt to be divided during the operation. This is the procedure when the contents of the sac are sound, but when unsound our practice must be modified.

The unsound parts when gangrenous have a greenish, dark, spotted appearance, they have lost their natural elasticity and firmness, the intestine has no longer the smooth shining appearance so characteristic of healthy intestine, the serum in the sac is dark-coloured, and the parts may even have an unpleasant smell; now, if the parts were in the state described, it would be highly improper practice to return them into the abdomen, the contents should be allowed to remain externally, the only thing is to divide the stricture.

The subsequent dangers are, unhealthy and undue inflammation of the surrounding parts, sloughing, peritonitis. Peritonitis must be checked by the ordinary remedies of inflammation—bleeding, leeching, fomentations, calomel so as to affect the mouth, opium to soothe pain and prevent the mercury from passing off by the bowels, &c. The inflammation in the surrounding parts will require local treatment, perhaps leeching, fomentations, poultices, &c., and the slough must be removed as soon as detached.

2. A gun-shot is a compound wound partaking of the characters of the contused and lacerated: its ordinary treatment is first to remove any foreign substance that may be present in the wound, as a portion of cloth, and then if the ball is not fixed in the bone, and is come-at-able remove it; the cold water-dressing may then be applied, and the wound allowed to heal by granulation *from the bottom*: when the wound occurs

in one of the extremities and is attended with great destruction and injury to the soft parts, comminution of the bone, when it has much injured any large joints, when the patient is weak and not likely to pass safely through the suppuration and constitutional irritation, amputation should be performed.

If inflammation should have set in before the performance of amputation, it would be necessary to wait until such time as the inflammation has been subdued; but if there should be much constitutional irritation and pain, the operation may be performed even in this state, as I have witnessed in the Hospital, where the injury was occasioned by the bursting of a heavy gun: but under ordinary circumstances the operation should be delayed until by proper applications and rest, we have overcome this enemy of the healing process.

If any artery of considerable size has been severed by the ball, and the hæmorrhage is great and urgent, the following plans must be resorted to:—the artery should be seized with a Liston's artery forceps, that is to say, if it is superficial and can be seen, and a ligature applied to it, hæmorrhage being temporarily restrained by a tourniquet, or simple pressure by an assistant's hand, upon the main artery of the part;—besides this *torsion* may be used, or even the actual cautery*:—cold is very powerful in restraining hæmorrhage. It is not always *absolutely* necessary to remove the ball, generally speaking it is; other foreign bodies should also be at once extracted if possible; it would be very proper practice, I think, to dilate the wound a little, if necessary, for the purpose of removing the ball, or other foreign body, and comminuted pieces of bone supposing such to have occurred, instead of leaving them to be extruded by subsequent suppuration, which is sure to set in and produce great derangement of the health and constitution.

3. The symptoms of acute dysentery are, frequent calls to stool when little or perhaps nothing is passed, great and continued straining, the stools are muco-bloody, or only bloody, little or no fecal matter being evacuated; pain increased upon pressure either along the cæcum, colon, or sigmoid flexure, or rectum; heat and tenderness of the belly;—when the rectum is the chief seat of disease, difficult and painful micturition; loss of appetite; sleepless nights; hot and dry skin; furred tongue, frequent and hard pulse, thirst, and other symptoms of high inflammatory fever. The *causes* of dysentery are various; exposure to cold, especially if long continued; eating crude, indigestible, and irritating substances.—I had a patient under my care in the hospital in whom it appeared to arise from eating too greedily of *curry and rice*; a neglected diarrhœa; it sometimes occurs after an attack of hepatitis; and it is the sequela of some exanthematous diseases.

Pathology.—Inflammation of the mucous coat of the bowel, going on to ulceration and sloughing; congestion: thickening of the coats of the bowel; softening; attenuation of the coats; perforating ulcers.

Treatment.—Bleeding, both general and local; a mild purge as castor-oil; calomel, and ipecacuanha, with or without opium; and the calomel must be continued as long as the acute symptoms remain urgent;—then blue-pill, ipecac. and hyoseyamus pills may be given with advantage. Anodyne injections, that is, laudanum injections: an occasional purge of

* The errors of practice contained in these remarks were corrected by Mr. Pettingal, upon an unpremeditated and unexpected *visâ voce* examination on the subject.—ED.

oil or sulphur and magnesia should be administered. These are the chief remedies I have *seen* employed: some practitioners recommend other methods, not necessary to detail here.

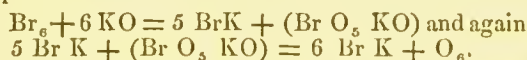
In chronic dysentery, our principal remedies are local bleeding, astringents, and blisters:—the sulphate of copper and opium, or the acetate of lead and opium are those in ordinary use; the lead injection is very serviceable, it is composed of ℥j of sugar of lead, ℥j of laudanum, and ℥ij to iv of water;—besides these, catechu, kino, the compound kino powder, compound chalk powder with opium, &c., may also be resorted to.

FRED. J. PETTINGAL.

Replies of General Students.

CHEMISTRY.

I. Bromine is found dissolved in the water of the salt-springs of many places, and of these, those at Kneuznaek are, I believe, most rich in them. To prepare this substance, the mother liquor is exposed to a current of chlorine gas, so long as it becomes darker in colour from the bromine that is disengaged. The liquid is then agitated with ether which rises up to its surface along with the bromine contained in it. This compound of ether and bromine is now mixed with an excess of potash, whereby bromide of potassium and bromate of potash are obtained; and these products, being ignited, are converted into bromide of potassium. The following equations represent the changes that take place in this process:



The bromide of potassium thus obtained is heated either with peroxide of manganese alone, or with it and sulphuric acid in a flask when the red vapours of bromine are seen to escape. The changes that take place when sulphuric acid is used may be expressed by the following equation:



Properties. Bromine is, at ordinary temperatures, a red solid of the sp. gr. of 2.99. Its vapours are very much like those of the nitrous acid gas. It decolorises organic substances, and in this as well as most of its other properties, is analogous to chlorine. Its affinities to other simple bodies are not so strong as those of the last mentioned substance, chlorine.

Of all the compounds of bromine, hydrobromic and bromic acids are the most important. They are respectively composed of H Br and Br O₅.

Test.—Starch strikes a brown colour in it.

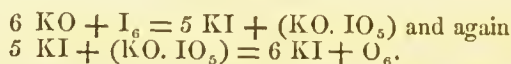
2. Iodine exists in kelp and the ashes of other fuci and marine plants. To prepare it, the ashes are lixiviated with water and to the mother liquor is added a mixture of one part of sulphate of copper and two parts of sulphate of iron when a curdy white precipitate of the subiodide of copper, Cu₂ I, falls down; and when this product is heated along with peroxide of manganese and oil of vitriol, the purple vapours of iodine are disengaged which become condensed in the receiver as a crystalline mass.

Tests.—Its vapours are characteristic of it. Its distinguishing test however is the blue colour which starch strikes in its solutions. When this test is employed, it is better to add *first* either chlorine or oil of vitriol to the solution of iodine and *then* starch, for the latter substance does not give a blue colour with iodine when it is in a state of combination with other bodies.

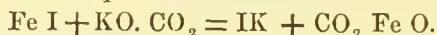
The acids which iodine forms with other simple bodies are the hydriodic, iodic and periodic acids. They are severally constituted of HI, IO₅ and IO₇.

3. Iodide of potassium is obtained by dissolving I in aqua potassæ, when iodide of potassium and iodate of potash are obtained; and by igniting these, iodide of potassium is procured.

The following two equations express the changes that take place in this process:



There is another, and, I believe, a more convenient method of preparing this substance, which is to bring iron in contact with iodine under water when an ioduret of iron is formed, and to digest this ioduret in a solution of carbonate of potash. The changes taking place in this process are expressed in this equation:



The most striking instances of the uses of this substance as a re-agent that I know are two in number, viz. it gives a bright yellow precipitate with solutions of the protoxide of lead and its salts; and a bright scarlet, with those of the peroxide of mercury and the other per-salts of that metal.

The latter precipitate, which is the biniodide of mercury possesses a very curious property. It is this—when it is heated it becomes yellow, and the least touch of a needle, or some such delicate thing, makes it gradually regain its natural beautiful scarlet colour.

4. When solutions of IK and acetate of lead are mixed, the following changes take place:—



The results being acetate of potash and iodide of lead.

5. Cyanogen is prepared by heating six parts of ferrocyanide of potassium with nine parts of bichloride of mercury. In this case, the cyanogen of the ferrocyanide of potassium is given off, and the chlorine of the bichloride of mercury combines with the potassium of the ferrocyanide, forming chloride of potassium. Cyanogen consists of two eq. of carbon and one eq. of n. It burns with a purplish red flame, and is the type of all those substances that are known under the name of compound acid radicals. This substance is liquified by a pressure of three or four atmospheres. It forms very important compounds with other bodies, such as hydrocyanic acid, ferrocyanide of potassium, and so forth.

6. To prepare the ferrocyanide of potassium organic substances, such as hoofs, horns, &c., are heated with the pearl-ash of commerce in an iron vessel and the melted mass is lixiviated with water, when the substance in question is deposited. In this process, the cyanogen obtained by the action of potash on the organic substances combines with the potassium of the pearl-ash forming cyanide of potassium, which again by acting on the iron, contained in the melted mass, yields ferrocyanide of potassium.

The precautions necessary to ensure success in this process are these—the carbonate of potash should be impure and the retort made of iron.

This salt consists of 2 equivalents of cyanide of potassium and 1 eq. of cyanide of iron. It is a yellow solid, the crystals of which are hexagonal.

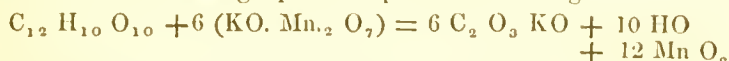
7. Ferridecyanide of potassium is a salt having for its base the hypothetical radical ferridecyanogen. It is prepared by passing chlorine gas through a solution of ferrocyanide of potassium until it ceases to give a blue precipitate with the solutions of the protoxide of iron and its salts.

The ferrocyanide of potassium gives a pale blue or rather white precipitate with the solutions of the protoxide of iron and its salts, and a deep blue with those of the peroxide of iron and its salts; whereas the ferridecyanide of potassium has no action on the solutions of the salts of the protoxide of iron, but gives a deep blue precipitate with the persalts of iron.

8. The tests of copper in solution are as follows:—

Caustic alkalis give a pale blue precipitate; ammonia a deep blue, and ferrocyanide of potassium a chestnut brown precipitate. Iron and zinc reduce copper from its solutions.

9. Oxalic acid is prepared by heating 1 part of starch with 8 parts of nitric acid. The changes that take place in this process are too complicated to be easily understood. This acid is also prepared by heating anhydrous sugar with permanganate of potash when oxalate of potash is obtained. The following equation represents the change:—



Now by the action of sulphuric acid on the oxalate of potash, oxalic acid is obtained.

10. Tartaric acid exists in the juice of the vine as acid tartrate of potash which is obtained by converting the sugar in which it remains dissolved into alcohol, in which the acid tartrate is insoluble.

Now by the addition of chalk to the acid tartrate of potash, the latter is converted into tartrate of lime from which tartaric acid is obtained either by the action of sulphuric acid or oxalic acid, which combines with the lime forming sulphate or oxalate of lime.

CHUNDER COOMAR DEB.

CHEMISTRY.

Answer to Question 1st.—It is found in sea water, along with chloride of sodium, as bromide of sodium, potassium or magnesium: it is obtained from the bittern or mother liquor, after the common salt being crystallised, first by passing chlorine gas until all becomes dark, and here chlorine combines with the body with which bromine was in combination and setting the bromine free, then agitating the liquid thus obtained along with ether, which takes the bromine and rises to the surface having a beautiful hyacinth red colour. Now act upon this solution of bromine in ether thus obtained by potash, which forms bromide of potassium and bromate of potash, thus $6 \text{Br} + 6 \text{KO} = 5 \text{KBr} + \text{KBrO}_3$; now filter the precipitate thus obtained, and dry it and lastly ignite it with a slow fire by which bromate of potash is decomposed, forming bromide of potassium and oxygen, which is given off in the form of gas. Thus $\text{KBrO}_3 = \text{KBr} + \text{O}_6$. Now heat the bromide thus obtained along with peroxide of

manganese and sulphuric acid, by which sulphate of protoxide of manganese and sulphate of potash are formed, and bromine having no other body to combine sets free and condenses in the retort—thus explained, $KBr + MnO_2 + 2SO_3 = KO, SO_3 + MnO, SO_3 + Br$ —this is the most economical process to obtain it, but there are other processes—such as by acting on bromide of potassium by chlorine gas, which easily takes the potassium forming chloride of potassium and setting the bromine free,—thus shown $KBr + Cl = KCl + Br$,—it can also be prepared from any compound of it by the action of chlorine. It is a gas at ordinary temperatures of a dark brown colour, approaching to the purplish, it has a disagreeable and penetrating smell,—it cannot be breathed, if breathed it excites coughing, it is poisonous, if inhaled in a large quantity, it combines with hydrogen, forming an important acid, hydrobromic acid analogous to hydrochloric acid.

The most important compounds which it forms, are the following:—With hydrogen it forms an acid called hydrobromic as above demonstrated, containing one of hydrogen and one of bromine; with oxygen it forms bromic acid analogous to chloric acid, containing one of bromine and five of oxygen, and there are supposed by some that it forms bromous acid also containing one of bromine and four of oxygen, but it is not settled that such a compound exists: it combines with alkalis forming bromides, such as bromide of potassium, sodium, and containing one equivalent of each element; it also combines with metals forming bromides, such as bromide of copper, mercury, silver, platinum, &c., each containing one equivalent of each.

Test for detecting bromine is the chlorine gas, by which bromine is set free giving the dark brown colour to the solution,—here chlorine takes its place, because bromine has less an affinity for other bodies than chlorine has for them, or if there be any doubt, subject the dark liquid thus obtained to the process already described for procuring bromine.

2d.—It also exists in sea water but in small quantity; it exists in abundance in the marine vegetables, it is obtained from these sources, but it is best obtained from the kelp: thus dissolve the kelp in water, and then precipitate it by the mixture of one part of sulphate of copper and $2\frac{1}{2}$ part of sulphate of iron by which iodine from the kelp is precipitated as subiodide of copper and filter and collect the precipitate, and lastly dry it, then mix it with sulphuric acid and peroxide of manganese; now apply heat to it by which sulphate of protoxide of manganese and sulphate of suboxide of copper are formed and iodine set free in fine purple coloured vapour, and condenses in receiver. The theory is very simple like that of bromine and not hence required: also prepared by heating iodide of potassium with peroxide of manganese and sulphuric acid, and theory of this is exactly similar to the first that is forming sulphate of potash and sulphate of protoxide of manganese and iodine.

Tests for iodine:—acetate of lead gives yellow precipitate of iodide of lead; a solution of potash gives white; these tests are used when it is in combination with other bodies: test for free iodine is the starch which gives a fine deep blue precipitate, but if iodine be in a very minute quantity the precipitate will not appear, hence in this case add previous to the addition of starch, some chlorine water.

Acids, which it forms with simple bodies are the following,—first, the most important is the hydriodic acid, containing one equivalent of iodine and one of hydrogen, the second is the iodic acid containing one of iodine and five of oxygen, the next is the periodic acid analogous to perchloric acid, containing seven equivalents of oxygen with one equivalent of iodine.

3d.—Iodide of potassium is obtained by passing sulphuretted hydrogen over iodine diffused in water, which forms hydriodic acid and then adding a solution of potash, by which both of them are decomposed, hydrogen of the acid combines with the oxygen of potash forming water, and iodine of the acid with potassium forms the iodide of potassium; thus $\text{HI} + \text{KO} = \text{HO} + \text{KI}$, or obtained by passing iodine through a solution of potash where it forms iodide of potassium and iodate of potash in the first stage; thus, $6 \text{I} + 6 \text{KO} = 5 \text{KI} + \text{KO IO}_5$,—but this in the second stage is decomposed giving off oxygen and reducing itself to the state of iodide of potassium $\text{KO IO}_5 = \text{KI} + \text{O}_5$,—also obtained according to the pharmacopeia process. That is take iodine six ounces, iron filings four ounces, water four pints, or as much as sufficient, and carbonate of potash as much as sufficient to precipitate. Boil the iodine with iron filings and half of the water, until a green colour appear, now remove the vessel and let it cool,—after this being done precipitate it by carbonate of potash previously dissolved in half of the water, by which iodide of potassium is precipitated, and now it can be collected over a filter and washed and dried.

Decomposition.—When iodine and iron are boiled together there is a combination takes place between them, forming iodide of iron, and now when this is acted on by carbonate of potash, the iodide of iron is decomposed. Now the iodine combines with the potassium of the carbonate forming the iodide of potassium,—and the iron combines with the oxygen of the potash, forming protoxide of iron which, by attracting one additional equivalent of oxygen from the atmospherical air becomes peroxide,—and carbonic acid in this case instead of combining with the oxide of iron escapes in the state of gas—thus— $\text{FeI} + \text{KO CO}_2 = \text{KI} + * \text{FeO}_2 + \text{CO}_2$ —this last described process is very good in all respects, but not in one respect, that is, there is a great difficulty in separating oxide of iron from it.

The uses of it as a test.—Iodide of potassium gives greenish precipitate of sub-iodide of copper with sub-oxide of copper, and bluish white with protiodides of copper—it also precipitates protosalts and persalts of mercury into white protiodide and periodide—it precipitates platinum into pale yellow iodide of platinum.

5th.—Cyanogen is prepared by heating dry bicyanide of mercury, by which mercury remains with part of the cyanogen in the retort, and another portion of it is given off,—or it is best obtained by heating six parts ferrocyanide of potassium with four parts of bichloride of mercury: here two equivalents of potassium with two of chlorine form two equivalents of chloride of potassium and cyanide of iron remains undecomposed, and mercury is here reduced to its metallic state,—thus shown by the equation $2 \text{KCy} + \text{Fe} 2 \text{Cy} + \text{Hg Cy}_2 = 2 \text{Kcl} + \text{Fe Cy} + \text{Hg} + 2 \text{Cy}$.—Cyanogen is composed of carbon two, and nitrogen one: it is a gas, it is inflammable, it explodes with hydrogen, it is colourless but poisonous when taken in.

6th.—Ferrocyanide of potassium is prepared by heating the animal matter such as dried blood, hoofs, horns, &c., with potash and iron filings in an iron retort, and then when gases cease to pass, throw the melted mass into water while ferrocyanide of potassium will form and be crystallised from the solution. *Decomposition.* It is said by Dr. Liebig that when animal matter is heated it produces cyanogen, which immediately

* And one equivalent from the atmosphere.

combines with the potassium of potash which is present in the retort, forming the cyanide of potassium, which cannot be decomposed by a strong heat,—which when thrown in water decomposes with the evolution of hydrogen forming ferrocyanide of potassium. It is proved by direct experiments that cyanide of potassium decomposes iron, thus shown, $3 \text{ KCy} + \text{Fe} + \text{HO} = 2 \text{ KCy} + \text{FeCy} + \text{H} + \text{Ko}$ —the precaution in this process is first the presence of iron, either from the vessel or introduced in it as filings; secondly, it requires fresh dried animal matter, because they are very rich in cyanogen; thirdly, it requires not to move the vessel from the fire until gases are ceased to disengage; fourthly, not to add the melted mass into water before it is being perfectly cooled. Ferrocyanide of potassium is composed of two cyanide of potassium and one of cyanide of iron; it is large crystalline body of lemon yellow colour, its crystals contain three equivalent of water of crystallisation, it is soluble in water, it is the only compound of cyanogen, which is not poisonous; it is used in procuring many compounds of cyanogen.

7th.—Ferrideyanide is a compound containing one equivalent of potassium more than ferrocyanide of potassium—it is obtained by acting on ferrocyanide of potassium by an additional quantity of potassium that it is by heating it with potash or carbonate of potash: it is anhydrous, and white in colour, and contrary to this the ferrocyanide is of lemon yellow colour, the proto-salts of iron are precipitated pale blue by ferrocyanide of potassium, and red prussiate with ferrideyanide of potassium, and persalts are precipitated deep blue by ferrocyanide of potassium and nothing with ferrideyanide of potassium.

8th.—Tests for copper are, first ammonia gives a blue precipitate. Sulphureted hydrogen or hydro-sulphuret of ammonia gives dark precipitate of sulphuret of copper, iodide of potassium gives bluish white with suboxide of copper, and white with protosalts.

8th.—Oxalic acid is obtained very pure by the action of eight parts of strong nitric acid on starch; in this oxalic acid will subside in crystals and hyponitrous gas, is disengaged along with a little quantity deutoxide of nitrogen and carbonic oxide gas.

9th.—Tartaric acid is obtained from the juice of the grape or tamarind, which is very rich also. First act on the acid juice of grape or of tamarind by lime, by which tartaric acid is separated as tartrate of lime and tartaric acid pure and free from lime is obtained by separating lime either by oxalic or sulphuric acid, which takes the lime forming either oxalate or sulphate of lime and tartaric acid is separated, which crystallizes from its solution, and remains after the separation of the oxalate or sulphate.

4th.— $\text{PbO}, \text{C}_4, \text{H}_3, \text{O}_3, \text{HO} + \text{KJ} = \text{PbJ}, - \text{KO}, \text{C}_4, \text{H}_3, \text{O} \cdot \text{Ho}$. that is here iodide of lead and acetate of potash are formed.

MAHOMMUD JAUN.

BOTANY.

1. If a seed be put into ground, and if the circumstances which are favourable for germination be not absent, then one part rises upwards to the solar rays and the atmospheric air, and the other part goes downwards into the earth. That which rises upwards is called the *stem*, (*caulis*,) *ascending axis*, *caudex ascendens* or *caudex intermedius*: but that which goes downwards into the earth is called the *descending axis* or *root*.

Section I.—Stem or ascending axis. Immediately consequent upon the growth of a plant is the formation of leaves. The place from which a

leaf proceeds is called the node: the space between two nodes is called an internode. The ramifications or divisions of a stem are called branches. The assemblage of branches, which forms the head of a forest tree is called the *coma*. When they proceed nearly at right angles from the stem, then they are said to be *brachiate*. When they proceed nearly at right angles from the stem, but before their termination into buds or flowers, they end in shoots, which take a circular course, then the stem is said to be *determinately branched*. Shoots which have not completed their growth have received the name of *innovation*. If a shoot be long and flexible then it is called *vimen*.

The stem may be considered in three different ways—

1st. With regard to its consistence.

2d. With regard to its structure.

3d. With regard to its growth, whether upon the surface of the earth, or beneath it.

1. With regard to consistence a stem may be,

1. *Herbaceous* (*Caulis herbaceus*) when the stem is soft, green, and perishes annually. The plants that have this stem are called herbaceous.

2. *Semiligneous*.—When it endures for many years, but the extremities of its branches die annually.

3. *Woody*.—When it endures for many years and consists of woody fibres.

4. *Solid*.—(*Caulis solidus*). When it does not present any cavity. Example, oak.

5. *Full*.—When it has no cavity, but the interior is filled with pith.

6. *Spongy*.—When the interior is filled with elastic cellular tissue.

7. *Fistulous*.—When it has a cavity, which is either continuous or divided by lines.

8. *Stiff*.—When it resists flexion.

9. *Soft*.—When it cannot support itself.

10. *Flexible*. When it can be bent.

11. *Brittle*. When it is stiff, but breaks very easily. (See MacLivrey's Elements of Botany, the author also of Geology.)

2. With regard to structure a stem may be exogenous or endogenous.

1st. *Exogenous Stem*.

An exogenous stem consists of pith, medullary sheath, medullary rays, wood, and bark.

1. The pith consists of *cellular tissue* only.

The cellular tissue or parenchyma, consists of vessicles or bladders, the sides of which are not originally perforated by visible pores. Each vessicle is a distinct individual uniting with another with which it lies in contact, and originating from a primitive point technically termed *eytoblast*, which is either absorbed, or remains within the sides of the vessicle. The contents of the vessicles are fluid, colouring matter (chlorophyll), crystals, which when acicular are called *raphides* and starch in granules, (parenchyma.)

The sides of the cellular tissue are thickened by the deposition of *sclerogen*. The function of the cellular tissue is to transmit fluid in all directions. There are two forms of the cellular tissue—*membranous* and *fibrous*.

Membranous cellular tissue is one whose sides consist of membrane only without any trace of fibre. It is the most common, and it was once supposed to be the only form that exists. It constitutes the whole

of mosses, algæ, fungæ, lichens, and the like. Fibrous cellular tissue is that whose sides consist either of membrane and fibre together, or of fibre only. It is found abundantly in the aerial roots of orchidous plants.

There are various forms which the cellular tissue assumes. The following are some of the forms:

1st. Sphæroidal or Merenchyma; 2, Conical or Conenchyma; 3, Prismatical or Prismenchyma; 4, Proenchyma.

2. The medullary sheath consists of spiral vessels, which are membranous tubes with conical extremities, and whose inside is occupied by a fibre twisted spirally.

3. Medullary rays consist of muriform cellular tissue.

4. Wood consists of woody fibres.

5. Bark consists of four coats—1st, epidermis; 2nd, epiphlæum; 3rd, mesophlæum; 4th, endophlæum or liber.

1st. The epidermis, when viewed by the naked eye, appeared to be one homogenous skin; but under microscopes it is found to be traversed in various directions by lines, which by constantly anastomosing, give it a reticulated character.

Upon the epidermis we see hairs, prickles, scales, glands, and stomates. The hairs are minute transparent filiform acute processes, composed of cellular tissue, more or less elongated and arranged in a single row. There are various forms of hairs,—downy, villous, pilose, hirsute, tomentose, velvety, silky, glandular, hooked, bearded, and rough. To define these varieties of hair will occupy a considerable portion of time which will prevent me to enter into the consideration of other questions as the time is very short and limited, I am, therefore, content in mentioning their names only. Prickles are complex rigid hairs of a conical form, straight or curved, and are composed of cellular tissue only. Scales or scurfs are flattened disks with rugged margins. They are composed of cellular tissue, and they give to the plant a leprous appearance. The scales that give to the plant a leprous appearance are called *Lepis*, to contra distinguish them from another form of scales called *squama*, which are rudimentary leaves. Ramenta are the scales which, I believe, are the same with *squama*. Gland is a small body, situated immediately beneath the tissue of the epidermis, which it causes to project. Gland is either sessile or stalked. A round gland is called wart, which by its exudation gives to the epidermis a rough appearance designated by the term *scabrous* or *scabre*. Stomates are the openings seen upon the epidermis. They are the organs of respiration, and are capable of being closed by the cells which form their sides.

Having described the epidermis and its appendages, it still remains to describe the other coats of the bark. Epiphlæum and mesophlæum are composed of cellular tissue.

The endophlæum or liber is composed of cellular tissue, laticiferous tissue, and woody tissue. The laticiferous tissue or cinenchyma consists of an uninterrupted anastomosing tribes, whose final divisions are so delicate that the eye cannot discover them without the aid of powerful microscopes. It conveys latex, a peculiar turbid fluid, to all the newly formed organs which are nourished by it. Woody tissue or pleurenychyma consists of slender transparent membranous tubes, tapering acutely to each end, lying in bundles and like the cellular tissue, having no direct communication with each other except by invisible pores. Many vegetable anatomists consider it a mere form of the cellular tissue in

an elongated state. However true this may be in theory, it can be known by its elongated figure and extremely attenuated character. It gives tenacity to the vegetable fabric, and conveys fluid from the lower to the upper extremities.

2d. Endogenous stem. It has no pith, no medullary sheath or rays, no bark, (a).

3d. With regard to growth whether upon the surface of the earth or beneath it, a stem may be aerial or subterranean.

Of the aerial stem there are six forms.

1. *Runner*.—It is a prostrate filiform stem producing by its extremity roots and a new plant, which gives birth to other runners. Ex. Strawberry.

2. *Sucker*.—It is a branch which proceeds directly from the neck of a plant from beneath the surface of the earth, and no sooner it emerges upon the surface of the earth than it becomes erect, producing branches, and subsequently roots.

3. *Offset*.—It is a short lateral branch, of some herbaceous plants, terminating by a cluster of leaves and capable of taking root when separated from the mother plant. Ex. *Sempervivum*.

4. *Rootstalk*.—It is a prostrate thickened rooting stem, producing plants annually.

5. *Vine*.—It is a wick stem, which either trails along the ground without rooting, or adheres to other plants with which it comes in contact by means of its tendrils. Ex. *Cucumber*, *Vine*.

6. *Pseudobulb*.—It is an aerial stem, analogous to tuber, from which it scarcely differs except in having an epidermis, which is thick and hard, and bearing the scars of leaves that it once bore.

Of the subterranean stem there are three forms.

1. *Cormus*.—It is the dilated base of the stem of the monocotyledonous plants, intervening between the roots and the first buds. It consists of cellular tissue, traversed by bundles of vessels and woody fibres; its form is that of a flattened disk. Ex. *Crocus*, *Colchicum*.

2. *Tuber* is an annual thickened subterranean stem, provided at its sides with latent buds from which new plants are produced the succeeding year. Ex. *Potato*, *Arrowroot*.

3. *Creeping stem*.—It is a prostrate filiform stem, which passes along horizontally beneath the surface of the earth, emitting roots and plants at intervals. Ex. *Triticum repens*.

SECTION II.

Descending Axis or Root.

Botanists of great reputation have often confounded subterranean stem with root. The root is to be distinguished by some absolute characters,—1. The ramifications of the root occur very irregularly and not in a symmetrical arrangement. 2. It has no leaf buds, no scales, no hair, no pith, nor other appendages. 3. It has no epidermis, the moment it enters the ground it loses it. The body of the root is called the caudex; the ramifications of the root is called the radicles, other writers call them fibroles. If a root be divided into a number of branches and fibres, then it is called fibrous. If the main root perishes at

(a) Its cellular tissue lies embedded in the vascular tissue, which has no tendency of being arranged into fibres. This constitutes the difference between ex. stem and en. stem.

the extremity, then it is called premorse or bitten off. The extremities of roots are called spongelets. There are various forms of roots. 1 nodose, 2 conical, 3 moniliform, 4 testiculat or tubercular, 5 coralline, 6 fasciculate, 7 tuberous, 8 placentiform.

Question 2. Ovarium is a hollow case situated at the base of the pistile, enclosing the ovules.

The ovarium is generally sessile, sometimes it is stalked as in the passion flower; the stalk is called the *thecaphore* or *gynophore*, the swelling of the ovarium after fertilization is called the grassification.

Ovule is a small semi-pellucid pulpy body enclosed within the cells of the ovary. The cord which attaches the ovule to the placenta is called the funiculus.

The ovule consists of two parts, the coats and nucleus. The coats are two in number, the primine and secundine; sometimes the epidermis of the nucleus forms the third coat, the tereine.

The nucleus is a conical mass contained within the coats of the ovulum. It consists either of albumen and embryo, or of embryo only. Albumen is the most feracious part of the nut; it is situated between the embryo and the coats of the ovule. It is called perisperm, and is destitute of vascularity. It is of various consistence, in palms it is stony hard. In *annonaciæ* and *myristicæ*, it is *perforated* by cellular fibres in which case it is called *ruminating*. It is generally wholesome, and may be frequently eat even in the most dangerous tribes with impunity. *Ex.* *Omphalococceæ*, a genus in *Euphorbiæ*.

The organized body that lies within the ovulum and for the purpose of nourishing and protecting which the ovulum was created is called the embryo, the rudiment of the future plant.

The embryo was originally included within the sac of the amnios. The latter is either absorbed or obliterated as the ovule advances to maturity or remains round the nucleus in the form of *vitellus*. The embryo consists of four parts. The cotyledons, the radicle, the plumule, and the collar.

The cotyledons are the undeveloped leaves, the radicle is the descending axis, the plumule or gemmule is the nascent ascending axis,—the collar is the line of separation between the base of the cotyledons and the radicle. The space that intervenes between the collar and the base of the cotyledons is called *cauliculus*.

The embryo is usually solitary, sometimes there are two or several.

When there are several embryos, it sometimes happens that two of them grow together, in which case a production analogous to animal dicephalous monster is formed. The form of the embryo is either curved, spiral, haliacal, vermicular or arcuate.

The raphe is a bundle of vessel which connects the base of the nucleus with the base of the ovulum. The coats of an ovulum have an organic connection with each other at some one point, which is at the base of the ovulum, this point is called the hylum. The point through which the vessels proceed from the funiculus is called the cholaza.

Forms of the ovule.

1. When the parts of the ovule undergo no alteration of position during their growth, the two sacs of the nucleus are all connected at the base of the ovule then it is called orthotropous or atropous.

2. When it is curved downwards so as to approach the placenta, then it is called campylotropous.

3. When it is curved downwards and grown to the lower half then it is called anatropous.

4. When attached by its middle so that the foramen is at one end, the base at the other, then it is called amphitropous.

5. When it is parallel with the faniculus, then semianatropous.

A simple ovary consists of a single carpellary leaf or a single series of carpellary leaf.

3d Question.—A compound ovary consists of one or several series of carpellary leaf.

Leaf Simple.

Leaf is an expansion of the bark immediate beneath the origin of a regular leaf, but in most plants it consists of cellular tissue filling up the interstices of a net work of fibres proceeding from the stem. It consists of two portions, the petiole and the blade, the petiole is the part which is situated between the base of the leaf and the stem. There are four forms of the petiole, strama, ligulate, pulvinus, and sheathed. The blade consists of two surfaces, the upper surface the pagina superior, the lower surface the pagina inferior. But if the leaf is situated vertically then the surfaces are lateral.

The simple leaf may be considered in five different ways.

I. With regard to the period of its existence it may be, 1st, deciduous; 2d, persistent; 3d, caudaceous; 4th, increcent.

II. With regard to its texture it may be 1st, coriaceous; 2d, membranous; 3d, scarious; 4th, stiff; 5th, soft.

III. With regard to its veneration, it may be, 1st, conduplicate; 2d, revolute; 3d, involute; 4th, obvolvute; 5th, circinate; 6th, plicate; 7th, equitant; 8th, unbriate.

IV. With regard to veration, it may be, 1st, veinless, (avenium;) 2d, equal veined, (quavenium;) 3d, straight veined, (rectivenium;) 4th, curved veined, (curvivenium;) 5th, natted veined, (netieulatum;) 6th, ribbed, (costatum;) 7th, falsely ribbed (pseudocostatum;) 8th, radiating, (radiatum;) 9th, feather veined, (penaivenium;) 10th, hidden veined, (introvenium.)

V. With regard to the form,

The form is divided in five parts.

1. Form with regard to the general outline.

1st, orbicular; 2d, ovate; 3d, obovate; 4th, elliptical; 5th, oblong; 6th, spathulate; 7th, wedge shaped; 8th, linear; 9th, needle-shaped; 10th lanceolate; 11th, roundish; 12th, triangular; 13th, pentangular; 14th, quinquanglar; 15th, deltoid; 16th, rhomboid, or diamond shaped; 18th, panduriform, or fiddle-shaped.

2. Form with regard to the base, 1st, cordate; 2d, rendform; 3d, lunulate; 4th, saggitate; 5th, hastate.

3. Form with regard to the apex, 1st, truncate; 2d, premorse; 3d, acute; 4th, obtuse; 5th, emarginate; 6th, retuse; 7th, mucronate; 8th cirrose; 9th, acuminate.

4. Form with regard to the sides, 1st, sinuate; 2d, lyrate; 3d, run-cinate; 4th, pinnatifid; 5th, bipinnatifid; 6th pectinate; 7th, lobed; 8th, cleft; 9th, lacinate; 10th, palmate.

5. Form with regard to the margins, 1st, entire; 2d, repand; 3d, toothend; 5th, crenate; 6th, serrate; 7th, spinous; 8th, fringed.

I could not describe the forms of leaf for want of time.

5th Question.—When several leaflets are attached to the same stalk then the leaf is called compound. It is divided into two parts palmi-nerved and compound leaf pinninerved compound leaf.

1. Forms of the palmi-nerved compound leaf.

1st, ternate; 2d, quaternate; 3d, quinate.

2. Forms of the penninerved compound leaf.

1st, Unigate or conjugate; 2d, bijugate; 3d, pinnate; 4th, imperipinnate; 5th, peripinnate; 6th, decreasingly pinnate; 7th, alternately pinnate; 8th, interruptedly pinnate; 9th, lyrate pinnate; 10th, verticillate pinnate.

For want of time I could not also describe these forms of leaves.

DINA NATH DAS.

MIDWIFERY.

Answer to Question I.—The organs concerned in the function of menstruation are principally the *ovaries* and the *uterus*. The *ovaries* are the organs from which the stimulus is derived, and the *uterus* is the organ from the inner walls of which the menses, or the catamenia are secreted. That the ovaries supply the uterus with the stimulus is proved in various ways; in the first place we find that when these organs are absent, diseased or atrophied, the menstrual molimen and the sexual peculiarities are not observed; this fact is confirmed by Dr. Montgomery, who removed the ovaries from a woman; in the next place we see that when the uterus is absent or diseased, and the ovaries in a sound and healthy state, an effort at menstruation is made at the beginning of each menstrual period. As to the nature and extent of the ovarian influence on menstruation, we know that at each menstrual period, these organs become congested and more vascular; but as to whether the graafian vesicles burst and pour out their contents, is a matter of dispute amongst authorities, some maintaining that at each menstrual period an afflux of transparent fluid occurs in one of these vesicles, distending and ultimately bursting it where it is least resisting, and that after eight or ten days the vesicle cicatrizes and becomes contracted, preventing by this means the flow of any blood from the ruptured orifices of the vessels of the vesicle; while others altogether deny the fact. That the catamenial fluid is eliminated from the inner surface of the uterus is proved by prolapsus and inversion of the uterus; a case is related of a woman by Dr. *Blundell*, who came to the Guy's Hospital, with inversion of the uterus, while the menses had been flowing. It was seen in this woman that the internal lining membrane of the uterus was in a congested state, its vessels distended with blood, its surface of a violet red colour, and that the fluid was dribbling from it. The fallopian tubes are concerned in this function, inasmuch as they too are found in a state of congestion and turgescence. It also appears that from their being the medium of connection between the uterus and the ovaries, when time requires it, that they are also concerned in the function.

Answer to Question II.—The placenta was first described by Pallopius; he described it to be a fibrous, spongy and tabular mass. It is circular in form, the circumference being from 18 to 21 inches and the diameter from 8 to 10 or 12 inches; it is thick in the centre and thin towards the circumference.

It has two faces, a maternal and a foetal, the maternal surface lies in contact with the inner surface of the uterus, being only separated from it by the intervention of a membrane, (the decidua serotina) the foetal surface is in contact with the external layer of the chorion (the exochorion.) It is seated at the fundus uteri, being a little directed to the left side for the most part; sometimes it lies by the side of the cervix uteri; and sometimes centrally across the os uteri; the two last seats are deviations from nature. In the centre of it is the funis umbilicalis inserted.

The placenta is chorion at a little advanced period of gestation; we know that the villi of the chorion gradually diminish in number and ultimately disappear from every part of it, except that which is in close contact with the uterus; at this point they become as it were concentrated and grow with more luxuriance in consequence of development of vessels within them from the inner surface of the chorion, (the, endo-chorion) or from both the layers. These vessels go on enlarging, multiplying, interlacing and anastomosing until they, with their connecting or separating sheaths of villi, or decidua serotina, form the mass of placenta. The ultimate structure of this organ is formed by the minute ramifications of the umbilical arteries and veins, with some quantity of cellular tissue; the arteries directly communicate with the veins, having no intermediate capillaries.

The salubrious changes, which the fetal blood undergoes, are accomplished in the placenta; we know that the blood in the fetus becomes oxygenised and imbued with the principles of nutriment and vitality by the action of the cells or tufts (intervening between the maternal arteries and veins in the placenta) on the thin walls of the fetal blood vessels. The placenta is as important an organ in the fetus as the lungs are in the adult.

Answer to Question III.—The symptoms of labor are divided under two heads, those that are indicative of the approaching crisis, and those that intimate that the process has already commenced.

1st. Symptoms that are indicative of approaching labour are, subsidence of the abdominal tumour, increased moisture and laxity of the vagina and the external parts and mental anxiety.

A. Towards the close of gestation, the external muscular layer contracts and sends the uterus gradually towards the pelvis; these contractions are unaccompanied with pain, and therefore are not taken notice of. This symptom to be regarded as a good sign inasmuch as it shews that the labour is disposed to commence in the natural way, and that there is sufficient room in the pelvis.

B. The increased moisture and laxity of the parts are also observed in the domestic animals, as cats and goats, this symptom also is to be considered favourable, for it shews that there is a disposition in the parts to dilate and the uterus to contract.

C. The 3d symptom is drawn from the state of the mind. Several hours before the accession of what is called true uterine pains, there is a degree of fidgetiness or anxiety for the result of the case. This is most remarkable in the brute creation, for a human female has reason to sustain and guide her, is confidently impressed with reliance on a Superior Being, and has the power of calling to her aid the soothing comforts of religion, so that we find that this symptom is controlled and modified in a female by religion, reason, and fortitude.

2d. Those which intimate that the process is actually commenced, are irritability of the rectum and bladder, nausea and vomiting, rigors unattended with any feeling of cold, discharge of a sanguineous matter, called in the language of the lying-in room, *the shew*, and painful sensations.

A. Irritability of the bladder and rectum; when the uterus descends in the pelvis and presses on these organs there must naturally be a frequent though ineffectual desire on the part of the patient to evacuate their contents, sometimes from this pressure there is a total retention of the contents of these organs.

B. Nausea and vomiting: some say that these symptoms depend on the intimate sympathy that exists between the uterus and the stomach, while others maintain that they depend on the dilatation of the *os uteri*,

and hence they consider them as favourable signs; I believe that the latter opinion is true.

C. We not unfrequently find that on the dilatation of the *os uteri*, there is a shivering unattended with any feeling of cold, such sort of rigor is also reckoned a good sign.

D. On the first dilatation of the *os uteri* there is a slight sanguineous discharge, consequent on the rupture of small blood vessels surrounding that part: this symptom is thought by midwives to be the sure and the infallible sign of labour.

E. When the concentric sets of muscles surrounding the fallopian tubes contract, there is a peculiar pain felt by the patient, referred from the uterine region to the loins, to the upper part of the sacrum and interior of the thighs. These pains and the intervals between them are regular. These pains are also positive sign of labour.

When the labour is said to have actually commenced, the head is just at the brim, (with the occiput on a level with the forehead) in its oblique diameter; now there are various positions which the head may take, the most common being the left occipito cotiloid, the first position.

Let us suppose that the head is in this position, with face towards the right sacro-iliac synchondrosis and the occiput towards the left acetabulum, the occiput descends a little and glides a certain distance along the plane of the ischium against which it rests, on the other side the sinciput is seen to descend and to glide against the convergence of the ischium and the short sacro-ischiatic ligament against which it rests, again the occiput is seen to descend on one side, and the sinciput on the other side. Simultaneously with this there is a slight rotatory motion on the longitudinal axis of the head; by the spiral direction of the pelvic cavity the face is thrown as the labor advances into the concavity, or as it is called the hollow of the sacrum, and the occiput under the symphysis, or arch of the pubis; (the right parietal protuberance the most depending part;) and the face sweeps along the hollow of the sacrum. When the head enters the outlet and presses on the perinium there is a copious discharge of mucus from the vagina, the perinium is stretched out and thinned, the vulva expanded and the anus opened. When the head is passing through the vagina the shoulders are seen to enter and engage themselves in the brim in the opposite direction just in the form of the letter X face L. occiput. R.

The shoulders make the same turn and observe the same relations to the pelvis as the head did.

Now after the expulsion of the fœtus the uterus does not act from 5 to 15 minutes; after this the pains are renewed and one or two pains are sufficient to expel the placenta and secundines as they are called. After the expulsion of the placenta the uterine contractions do not cease, but go on for some time until the uterus is contracted nearly to its natural state. I should have mentioned that the rupture of the membranes occurs in the end of the first stage, this takes place with respite of pain.

Now it is my duty to describe the stages of labour: the 1st stage the dilatation of the *os uteri* is effected by the contraction of the muscles surrounding the tubes, conveyed to it through the medium of the liquor amnii, which equalises and moderates the pressure. This is done by the agency of the uterus alone; the pains in this stage are short with long intervals, and they are called the grinding, cutting, or sawing pains; this stage is very long, and most tedious to the patient and the attendant. In this stage generally the rupture of the membranes and the discharge of the liq. amnii takes place.

In the 2nd stage the abdominal muscles as well as the uterus are concerned in delivery of the child.

In this stage the pains are steady and long continued, the intervals between them are shorter, the patient takes a long inspiration at each pain, and there is a febrile excitement, the P becomes quick and full, the breath is forcibly held in, and the body becomes bedewed with perspiration. The 3rd stage is occupied with the expulsion of the placenta and membranes, and contraction of the uterus nearly to its natural bulk.

NOBINCHUNDER BOSE,

Goodeve Scholar.

MATERIA MEDICA.

Ans. 1st.—In determining the different inflammatory affections and the circumstances under which mercury may be exhibited to produce its specific effects upon the system, it is necessary to take into consideration—1st, the nature of the inflammation; and 2nd, the texture which it affects. Thus we find that mercury is best indicated in inflammatory affections of the membranous tissues, especially in the adhesive kind, to control, stop, and prevent the effusion of coagulable lymph and serum; with this view it is given with the happiest results in *peritonitis*, *pleuritis*, *pericarditis*, &c. It is likewise used with advantage in cases in which there is a tendency to the formation of false membranes, as in *croup*. In rheumatic inflammation, especially in that variety of it which affects the fibrous tissues, it is often a very serviceable remedy. In syphilitic inflammation, there is no remedy equal to it, if judiciously administered. In hepatitis its efficacy is undoubted; in inflammatory diseases of the brain we generally give it as a purgative, but should it still affect the gums and produce its constitutional effects, that is to be considered as a very happy result. In these cases we do not venture to give it directly as a syalagogue, as in that case in order to prevent its running off by the bowels, we should be obliged to combine it with opium, which is especially contra-indicated in cases of cerebral inflammation. In *pneumonia* it is given with great benefit, generally in the second stage when *hepatization* of the lungs has occurred, and fulfils the same indication as in the adhesive inflammations of the serous membranes. In ophthalmia and iritis, it proves very serviceable. Besides these there are other cases in which it may be administered with benefit, such as *laryngitis*, *tonsilitis*, &c.

In administering mercury in the above inflammatory affections as also in others in which it may be given, an eye must always be kept over the character of the inflammation, and the state of the patient's constitutions, for should the inflammation be of a low asthenic type, and there be a cachectic state of the system present, mercury, as a general rule, is contra-indicated.

The existence of syphilis, when not of a phagedenic kind will indicate the use of mercury, and in such cases it proves invaluable; but should that syphilis be of a sloughing phagedenic description, its existence as also that of scrofula, local malignant disease, or of spleen, would greatly contra-indicate its employment; for if exhibited under such circumstances, mercury would produce or give rise to a number of affections, which often prove very distressing to the patient. Among these as examples may be mentioned *mercurial fever*, *diarrhæa*, various affections of the bones and periosteum; ulceration and sloughing of the salivary glands, mouth, &c., and sloughing unhealthy sores in various parts of the body.

Ans. 2nd.—The anæsthetic agents that are now generally employed to produce insensibility to pain, are *ether* and *chloroform*. Both these substances the patient is made to inhale, and they are carried into the system by the pulmonary surface. When the former is used, it is put into a vessel with a tube leading from it, which is supplied with a valve for the purpose of regulating the supply of atmospheric air when the ether is inhaled, and so placed as to let out what is exhaled. The latter (chloroform) is used in a very simple way indeed; a piece of sponge moistened with it may be held at the nostrils of the patient, and he made to breathe through it. As to the probable *modus operandi* of these agents there exists some discrepancy of opinion on the subject. According to some they operate by making a direct impression upon the nervous system; others again suppose that their first action is upon the mucous surface to which they are applied, and that this impression being carried by the sentient nerves to the centre of the nervous system, they produce their particular effects upon that system. The most probable supposition, however, is that they operate by being absorbed and carried into the circulation, and this view of their *modus operandi* is countenanced in some degree by some experimentalists having detected the smell of *ether* in the tissues of the body, the brain for example, in cases in which animals were made the subjects of experiments with ether. The circumstances contra-indicating the use of these agents are the existence of a tendency to apoplexy, to cerebral congestions and inflammation, for these agents themselves have a tendency to cause determinations to the head.

A tendency to pulmonary inflammations, as also deficient arterialization of the blood, may be regarded as circumstances contra-indicating their employment.

The best means of dispelling the effect of an overdose are the use of volatile stimulants, such as ammonia, &c., but by far the best remedy we can employ in these cases is cold effusion.

Ans. 3d.—The remedies used in the treatment of dropsical affections may be classed under three heads, the diuretics, the diaphoretics, and the hydrogogue cathartics.

When the dropsy is of a cardiac origin and unconnected with disease of the urinary organs; in fact when the kidneys are healthy, they afford the best channel for carrying out the accumulated fluid, and to fulfil this indication we employ what are called the diuretic medicines.

The following is a list of some of the most important diuretics:—

Squill, colchicum, digitalis, turpentine, broomtops; the salts of potash, such as the nitrate and acetate, nitric ether, &c.

	Dose
Squill may be given in the form of powder, ...	grs. ij iv
Tincture,.....	℥ss. i
Oxymel,	ditto
Digitalis,.....	Powder, grs. 1½
	Tincture,..... m. x xxx
Colchicum,.....	Powder, grs. iij viij
Compound,.....	Tincture, .. }
	Ditto, } ℥ss. 3i
	Vinum, }
Turpentine, .....	..... m x — xl
Broomtops,.....	Infusion, .. }
	Decoction, . } ℥j. — ij
Nitrate and Acetate of Potash,.....	grs. xv — xxx
Nitric Ether,	℥ss. 3i

of the above digitalis may be given in the active forms of dropsy, for physiologically it is known to depress vascular excitement.

It also proves more serviceable in ascites, hydrothorax and anasarca, than in ovarian dropsy or hydrocephalus.

Turpentine and ether being stimulant diuretics, they are admissible only in cases of debility and relaxed conditions of the tissues.

Colchicum and squill from their acrid and irritating effects are inadmissible in the active forms of the disease when arterial excitement is present. The salts of potash are refrigerant diuretics.

When however the kidneys are diseased and diuretics become inadmissible, we naturally seek to let out the fluid by other channels, and the bowels afford a most eligible one for the purpose, and for this hydrogogue cathartics are employed. The most important hydrogogue cathartics are—

Elatcrium—dose,	grs. $\frac{1}{8}$ to $\frac{1}{4}$.
Colocynth (ext.)	grs. v. to x.
Ditto (Do. Co.,)	ditto.
Jalap (Pulv,)	ʒi.
Ditto (Pulv Co.,)	ʒi.
Scammony,	grs. x. to xx.
Gamboge,	grs. v. to xv.
Croton Oil,	m. ij. or iv.

All the above cathartics are of course contra-indicated in inflammatory conditions of the intestines.

DIAPHORETICS.

Antimonials are given when the dropsy is active and connected with vascular excitement. Tartar-emetic is the best form, dose $\frac{1}{12}$ to $\frac{1}{6}$ grain.

Warm bath is often very serviceable. Sometimes when the diuretics do not operate well when exhibited separately, they produce their effects when given in combination, thus they may be combined as under

Pot. Aetatis.	
„ Nitratis,	aa. ʒi.
Tinct. ferri muriat.	m. v.
Spirit ether nitrici,	m. x.
Oxymel Scillæ,	ʒss.
Mist. Camph.,	ʒij.

This formula is used in the hospital.

Sometimes the diuretics may be advantageously combined with purgatives—thus

Calomel,	gr. v.
Squill,	gr. ij.
mixture may be taken at night and followed in the morning by	
Pulv. Jalap Comp.,	ʒi
Squill,	grs. $\frac{1}{2}$.
Digitalis,	grs. 2.

Mix.

But sometimes all these means will fail, and then if the symptoms become very urgent, threatening asphyxia, &c. one only resource lies in letting out the fluid by mechanical means, as by tapping the abdomen or thorax, &c., as the case may be, or if it be one of anasarca by acupuncture.

Ans. 4th.—The medicinal uses of tartar emetic are :

As an emetic. In fever to cut short its duration; to be successful it must be given early, and at the commencement of the disease, but the misfortune is that the physician is not called to treat the disease until it has been fully established, and the proper time for the exhibition of an emetic is over.

The above remarks apply *mutatis mutandis* to its employment as an emetic in certain cases of inflammation, such as croup, tonsilitis, swelled testicle, bubo, &c. in which, when given early, it produces very beneficial effects. In certain other diseases, such as whooping cough and spasmodic asthma, its use as an emetic is attended with benefit.

As a nauseant. It is used to relax the tissues, especially the muscular fibre in certain cases; as when we want to reduce dislocations of the larger joints (the shoulder and hip,) but the muscles offer a great resistance by their rigidity, and so render the reduction exceedingly difficult. Under such circumstances tartar emetic in nauseating doses becomes exceedingly useful by overcoming the muscular rigidity, and rendering the reduction of the dislocation, in consequence, easy. The same may be said with respect to its employment in certain cases of strangulation, which, although they could not be reduced before, but may be done so easily after the muscular relaxation produced by the exhibition of nauseating doses of tartar emetic.

As an antiphlogistic. It is used with the happiest results in inflammation of the lungs during the first stage or that of bloody engorgement, when it acts most beneficially by depressing the heart's action, and thereby lowering the circulation. Inflammation of the mucous membranes, as bronchitis for example, its use is also attended with great advantage, but to be successful it must be preceded by blood-letting, and combined with an antiphlogistic regimen.

As an expectorant and diaphoretic. It is a very useful remedy in severe chronic catarrh, chronic bronchitis, humid asthma, &c.

In fevers. Besides its being used as an emetic in the early stages of fever, it is used in common fevers to promote the action of the skin and diminish vascular excitement, and in common fevers it often proves very beneficial in this way. In the latter stages of typhus fever, attended with great cerebral disturbance as denoted by delirium, wakefulness, restlessness, &c. Dr. Graves has very advantageously employed a combination of emetic tartar with opium. The same combination has also been used with benefit in delirium tremens, as also the delirium attendant upon erysipelas, scarlatina, &c.

Externally tartar emetic has been used as a counter-irritant in chronic pectoral inflammations, &c. also as a stimulant application to chronic rheumatism. It has also been recommended to be rubbed in the region of the spine in cases of paralysis of children. A solution of it has also been used as a stimulating wash in indolent ulcers.

The dose of tartar-emetic, as an emetic is grs. i to ij, as an antiphlogistic, grs. $\frac{1}{2}$ to iij or iv., as a nauseant gr. $\frac{1}{6}$ to $\frac{1}{2}$, or as an expectorant and diaphoretic grs. $\frac{1}{12}$ to $\frac{1}{4}$.

ACONITE.

The chief use of this substance has been in the different forms of neuralgia, such as sciatica, lumbago, tic douloureux, &c. and for these it is an invaluable remedy and superior to every other in the whole range of materia medica. In these its tincture is generally applied to the affected part, and one or two applications sometimes operate like a

charm producing a very speedy cure, which in some cases is permanent, though in others not. In acute and chronic rheumatism, and in rheumatism attended with neuralgia, also in gastrodinia and neuralgic affections of the stomach and chest, in tooth-ache, ear-ache, hemierania, &c., it often proves very serviceable. As a sedative and depressant of the heart's action it has been given internally in aneurism, to lower the force of the circulation, and thereby favor coagulation within the aneurismal sac. In intermittent fever and other periodic diseases it has been recommended as a substitute for quina; but its efficacy in these cases yet waits to be confirmed by a more enlarged experience. By some it has been used as a diuretic in dropsy and occasionally with benefit. It has also been used as alterative in several varieties of skin diseases and glandular enlargements, &c., nor has it been left untried in several diseases of the nervous system as hysteria, epilepsy, chorea. In these its use has been occasionally attended with benefit. It has likewise been used anti-phlogistically.

Dose given in the form of extract, grain $\frac{1}{2}$ to $\frac{1}{3}$, tincture m. v.

The alkaloid which this contains is called aconitina. Its uses are similar to those of aconite; but it is a very dangerous poison, having been known to prove nearly fatal even in such minute doses as $\frac{1}{30}$ th of a grain. It is therefore very rarely given internally.

Of Strychnine.—From the known physiological properties of this substance, which consist in the production of spasm and convulsions, the indications for its employment as a theurapeutic agent in opposite conditions of the nervous system (paralysis) have been very naturally formed; and in those cases of it which are merely functional and unattended with any structural change (as for instance ramollisement of the brain,) its use has sometimes fulfilled all the expectation of its employers. But its employment in other disorders of the nervous system, such as epilepsy, tetanus, hydrophobia, in which, from its physiological effects upon the system, it would at once appear to be contra-indicated, and yet in which its use has occasionally met with success in the hands of certain practitioners, is neither equally obvious nor intelligible; but still the fact is so.

In functional anarosis it has occasionally proved successful. It has been used also in impotency; but unfortunately this malady often depends upon certain degrading and vicious habits which no remedy can cure.

The dose of strychnine is grain $\frac{1}{16}$, to $\frac{1}{8}$ gradually increased.

Of arsenious acid.—It has been often used and with success as a febrifuge and antiperiodic, and in these cases it has often an advantage over quinine, of being tasteless (not altogether unimportant especially if the patient be a child) and less apt to disagree. In some varieties of skin disease, chiefly those of the scaly kind, such as lepra, psoriasis, &c., its employment has met with considerable success. It is also supposed to possess anti-spasmodic virtues, and so given in several spasmodic diseases as epilepsy, chorea, &c., but in these cases, it has, like every other remedy that has been employed in their treatment, much oftener failed than succeeded. In *lupus* arsenious acid has sometimes proved of service. It is generally given in the form of Fowler's solution, or liquor potassæ arsenitis. Dose m. v. to x.

Answer 5—Chronic dysentery is treated by the exhibition of astringent substances, which may be either metallic or vegetable, and are given generally in combination with opiates, or the latter may be exhibited alone. Of the metallic class the most frequently used are the sulphates of copper and zinc and the acetate of lead. Of the vegetable kind, catechu, logwood, rhatany, &c.

The metallic astringents above mentioned may be prepared by the action of the acids upon the bases respectively, with which they combine.

The vegetable ones are prepared, the three first, kino catechu and logwood) from the natural family of Leguminosæ, and the last (rhatany) form Polygalæ.

The properties of the above substances;—sulphate of zinc is white of a styptic taste; by the application of heat it undergoes the watery fusion and is soluble in water. Sulphate of copper is blue, and hence called the blue vitriol, in other respects its properties are mostly similar to those of the above. Acetate of lead occurs in the form of white crystals of a sweetish taste, decomposed by heat with the evolution of acetic acid vapors.

Physiologically.—These substances act as astringents producing a constringing effect upon the parts to which they are applied. Taken internally they diminish the secretion from the mucous membrane of the alimentary canal, and it is this property of theirs which points them out as fit remedies for the treatment of chronic dysentery in which there is an abnormal and increased discharge of mucus from the large intestine, and a relaxed condition of its lining membrane.

Opium is produced from the natural family of Papaveracæ. It is obtained by making incisions in the capsules of the poppies and scraping off the juice which exudes during the night. When first obtained it has a soft consistence, but by keeping it becomes hard; has a somewhat dark colour and a heavy aromatic odor; to the taste it is exceedingly bitter.

Physiologically.—it is a narcotic anodyne, and sedative. When taken internally it diminishes the secretion from the alimentary canal, and also from the other organs, and increases the consistence of the stools and relieves a relaxed state of the bowels.

It has many other valuable physiological properties, but over which it would be foreign to our purpose to go over in detail, since we have to do here with its treatment only in chronic dysentery. For our present purpose its properties, which have been already noticed, such as its diminishing the discharge from the alimentary canal and relieving a relaxed condition of the bowels, are quite sufficient to indicate its employment in the disease in question.

The doses of the above substances—

Acetate of lead,	grs. ij	to vj
Sulphate of copper,	gr. $\frac{1}{2}$	to ij
———— of zinc	grs. ij	to v
Kino,		
Catechu,		
Logwood,	ā ā grs. x	to xxx
Rhatany,		
Opium,	grs. $\frac{1}{2}$	to ij or iij

I have already stated that they are generally given with opium.

When opium is given without the astringents, the most eligible form for its exhibition is the compound ipecacuanha powder which consists of

Ipecac.		
Opium,	ā ā	ʒi
Sulphate of potash,		ʒi
dose for an adult,	grs. x	to xv

Besides the remedies already noticed as used in the treatment of chronic dysentery, there are others which are also had recourse to, and among the most important of these are the mild purgatives, such as castor

oil in doses of $\frac{3}{4}$ i to ij, or a combination of sulphur and magnesia, in doses of $\frac{1}{2}$ j each. These are given to keep the bowels free.

When the patient becomes extremely debilitated and lacks support, tonics in combination with opium are indicated, and among these the vegetable astringent tonics are the best that can be used.

When there is great tenesmus and irritability of the bowels present, anodyne enema, such as is made by a combination of soap and opium, may be used with advantage. If there is any degree of tenderness present, leeches and fomentations may be used.

Ans. 6th.—Nitric acid may be prepared by the action of sulphuric acid upon nitrate of potash, sulphate of potash is formed and nitric acid set free.

Its uses are similar to those of the other mineral acids, but it is said to act less decidedly as a tonic and therefore less fit to be exhibited in those debilitated conditions of the system in which a tonic is required and where the other mineral acids (the sulphuric and hydrochloric) may be exhibited with considerable benefit. Internally it is given in alkaline forms of dyspepsia, to neutralise the alkali present in the stomach, for these cases its efficacy is improved by being combined with hydrochloric acid, for the latter is a natural constituent of the gastric juice. In phosphatic diathesis in which the urine becomes alkaline, it may be given to alter its nature and render it of the natural quality. It has been recommended and used in venereal diseases occurring in scrofulous subjects in whom mercury is contra-indicated; and likewise in diseases of the liver; and cases are on record of these being treated sometimes successfully by nitric acid.

Externally nitric acid is used as a caustic to destroy sloughs, warts, and phagedenic ulcers, as also parts bitten by serpents and venomous animals; in these last cases its liquidity gives it an advantage over the solid caustics, as by virtue thereof it is able to enter and penetrate into pores and parts where the poison might have been introduced.

Dose of the dilute acid *℥. vi. to x.*

NOBINKRISTO BOSE.

MEDICINE.

Answer 1st.—Disease may be generally defined to be a deviation from or derangement of the natural functions of the body, when any part or organ ceases to perform its office in a manner that it is intended to do, and which it does in a natural and healthy state; and itself undergoes changes in structure, which are not met with in a normal condition of the system, it is said to be diseased, or in other words to have departed from the healthy state.

We call a disease to be epidemic when it prevails, or in other words attacks a number of individuals in a particular season or particular period; we call it endemic, when it rages in a particular place or locality; on the other hand it is called sporadic when it attacks individuals without reference to any particular time or place, *i. e.* when it is altogether unconnected with any peculiarities of locality, temperature, or season of the year.

Answer 2d.—The changes which the blood undergoes from disease are the following:

From Inflammation.—In inflammatory blood, the quantity of fibrin becomes increased both in quantity and plasticity, the serum generally diminished probably in consequence of increased exudation; the albumen of the serum is found to be augmented, and the red corpuscles diminished relatively to the fibrin.

Continued fever.—During this disease the red corpuseles of the blood are increased, the augmented quantity always disappearing on the cessation of the fever; there is also a relative diminution in the quantity of the fibrin.

Chlorosis—In this affection the red corpuseles of the blood are diminished in a most sensible degree; and in cachectic states of the system, there is a diminution both of these as also of fibrin, the nutrient principle of the blood.

In Albuminous urine.—The quantity of albumen in the serum of the blood is found diminished, and this is just what may almost *a priori* be expected from the great drain of albumen from the system through the urinary channels.

Cholera.—The saline matters of the blood are diminished. Besides the above the blood may be either increased or diminished in quantity; or improved or impaired in quantity as in plethora and anemia respectively.

The substances, which are occasionally found as abnormal presences in the blood are the constituents of some of the secretions or excretions, which are in the healthy state, separated from the blood by particular organs provided for the purpose, but which are detained in it in certain diseased conditions of those organs, which suspend or derange their functions; thus in suppression of urine we meet with urea in the blood, which in the natural condition are separated from it by the kidneys, and carried out of the system as an excrement. In diseased state of the liver, as for example chronic hepatitis, which impairs the functional activity of the organ, we find the admixture of bile, or rather the constituents of it, (for it is called bile only when it is secreted by the liver) in the blood.

Answer 3rd.—Remittent fever may be regarded as the severer grades of those pathological changes, which constitute the intermittent fever, which it resembles in having a daily exacerbation, but from which it differs in not being ushered in by rigors, as also its hot stage being followed by collapse, which is not the case in intermittent fever. It generally comes on with languor, feebleness, anxiety, oppression in the chest and pain in the head, especially the back of the neck and loins. The symptoms vary according to the constitution of the person attacked. In weak and delicate subjects, we have a feeble rapid pulse, scanty and watery evacuations from the bowels, cold extremities, gums livid, a moist and furred tongue, and the body covered by a cold sweat during the paroxysm. In strong and robust persons, the vascular excitement runs high during the paroxysm, and we have a flushed face, hot skin, a full rapid pulse, the conjunctivæ injected with blood, dark, scanty evacuations from the bowels, the abdomen tense and the epigastrium tender, the urine scanty and high coloured, and the tongue furred. The symptoms also vary according to the nature of the particular epidemic, at one time assuming an inflammatory, at another an adynamic type.

In hot countries remittent fever is a very serious malady; it is characterised as has been already stated by a hot stage which is followed by a state of collapse. There are sometimes two paroxysms in the course of twenty-four hours, but generally there is only one. The disease is also attended with local congestions which greatly complicate the malady and increase its danger. These congestions most frequently occur in the brain and abdominal organs, occasionally also in the lungs. Sometimes the organ first congested is set free and the determination takes place in another, at first showing no signs of it. The disease even when it occurs in a mild form, is much to be guarded against, as it is sometimes liable

to change its character suddenly, and produce serious and often dangerous symptoms. Sometimes after two or three paroxysms the stage of collapse is attended with profuse clammy sweats, which produce great anxiety about the life of the patient.

Treatment.—Blood-letting in this disease is our most valuable remedy, especially when occurring in young and plethoric individuals; but it must be employed early. In severe cases after three or even two paroxysms it must be employed with caution. It should never be resorted to when the paroxysm is passing off, for in that case it is liable to produce dangerous or even fatal collapse; to be successful it must always be used in the commencement of a paroxysm. The patient should be bled in the incumbent posture, for it is not our object here as in inflammation to produce syncope, but to take out and diminish the quantity of blood in the system and thereby relieve congestion. In weak and delicate subjects, especially in natives of this country, particular caution must always be observed with regard to this spoliative measure, even when the disease assumes an inflammatory type. The blood-letting may be followed by a sedative of calomel; or if the abdomen is tense we may administer gr. viij of calomel, with as much of the comp. extract of colocynth, and if this brings on dark, ill-smelling evacuations, consisting of vitiated bile, a scruple dose of calomel may be exhibited without hesitation. If the skin remains hot, the calomel may be combined with emetic tartar, and given with much advantage. But while we employ these depletory measures with the one hand, we must always be provided with tonics, stimulants and means of supporting the patient in the other, for the stage of collapse is soon to follow and demand for them in a most imperative manner. When the febrile paroxysm subsides and the skin and tongue be moist, quinine should never be omitted, as in such cases it fulfils a most valuable indication by preventing the recurrence of paroxysm. During the stage of collapse, when the vital powers are sinking as denoted by a weak quick pulse, cold extremities, clammy perspirations, and sinking in the precordia; we are to employ stimulants such as ammonia, ether, wine, &c., and apply stimulating poultices, such as mustard plasters to rouse the vital powers and support the patient. After recovery the convalescent should be most carefully watched.

In this disease there are two very dangerous periods in which a fatal event is to be dreaded; 1st, during the excitement of paroxysm, when effusion is likely to occur; and 2d, in collapse when the capillaries of the system are relaxed: death most frequently occurs by coma.

Answer 4th.—The different causes of paralysis are several structural diseases of the nervous system, effusion of blood, or serum within the head or spinal column; a congested or inflamed condition of the nervous centres; pressure upon the brain, or course of a particular nerve any how produced; diminished supply of nervous energy to any particular part; and the presence of certain poisonous substances in the system, such as lead, &c.

The treatment of paralysis vary according to the cause upon which it depends; thus if it arises from an inflammatory or congested (active) condition of any portion of the nervous system, bleeding, purgatives, mercury, and counter-irritants are to be used, and they may often prove of service. When the patient is greatly debilitated and the paralysis appears to be owing to a state of passive congestion, for instance of the cerebrum, tonics may be employed with advantage. When the cause is a pressure, &c., that must be removed, if possible.

When the paralysis is merely functional and unattended by structural changes in the brain or the other parts of the nervous system, various remedies, such as strychnine, brucine, galvanism, electricity, &c. have been recommended, and this has sometimes been attended with success.

Very frequently, however, when the paralysis is attended with, and depends upon structural nervous diseases, such as ramollissement of the brain, our best directed efforts, and all the remedies we can employ, will succeed in producing no effect whatever upon the disease.

Answer 5th.—The symptoms of pneumonia being the obvious and easily-intelligible effects of the anatomical changes, which the lungs undergo during the progress of pneumonia, it may be expedient to consider those changes first and then the symptoms both general and auscultatory to which they give rise, and answer this question in the reverse order in which it is asked.

Pneumonia is generally divided by writers on practice of medicine into three well-marked stages.—1st, vascular engorgement; 2d, hepatisation or solidification of the lungs; and 3d. and last, purulent infiltration.

1st.—Bloody engorgement.—During this stage the air-cells become filled with blood or rather a bloody serum; and they become of a reddish colour, become heavier than in the normal state, but still float in water; they crepitate less under pressure, and when cut into pour out a quantity of frothy serum.

The auscultory signs in this stage.—Percussion still gives a hollow sound for there is still air in the lungs; on listening to the chest however (on the part in which this change is in progress) we hear a fine crepitating sound, such as is produced by rubbing a lock of hair between the ends of the fingers near the ear.

This sound is owing to the passage of the air through liquid (serum) present within the air-cells and the formation and bursting in quick succession of a number of air bubbles produced thereby.

2nd.—Stage of Hepatization.—In this stage the air-cells are filled up by the effusion of coagulable lymph, by which they are rendered, in fact, solid, resembling the liver, whence the name.

When examined, the lungs of one dead during this stage, the lungs do not crepitate at all under pressure; they are found to be of a greyish red or dark grey colour, and they sink in water. When cut into, the internal surface generally presents a speckled appearance.

Auscultatory signs.—Percussion during this stage yields a dull sound; we could not expect it to be otherwise even *a priori*. The substance of the lungs has been solidified, it contains no air, so that on percussion the part of the chest to which the solidified portion corresponds, can yield the only sound which solid substances on being struck emit, viz. a dull sound, and this is found to be actually the case. On listening to the chest we hear, instead of the natural respiratory murmur, or the crepitating sounds, which were heard during the 1st stage, bronchial respiration and bronchophony. These sounds always exist, but they cannot be heard during the healthy state of the lungs in consequence of their being covered up by the natural respiratory murmur; but now that the latter sound is no more, (for air cannot pass into the solid lung) and there is nothing to cover them up, they are heard when the ear is applied to the chest. The first of these (bron. respir.) is caused by the passage of the air through the bronchial tubes, and the 2nd. (bronchop.) by voice being resounded within the tubes.

3d.—*Stage of purulent infiltration*.—The inflammation has now run on to the suppurative stage, pus has been formed, and infiltrated within the pulmonary substance.

Auscultatory signs.—Percussion still yields a dull sound, and by the stethoscope we hear pretty much the same sound as heard during the 2d stage, and the cause of this may be easily understood. The condition of the lungs physically considered, is the same in this as in the preceding stage, viz. they are filled up in both cases in the one with lymph, in the other with pus; but as in both cases the ultimate result is the same, viz. to render the lungs impervious to the air, the sounds perceptible in both cases are in consequence similar too. Sometimes, however, a sort of gurgling may be heard during the 3d. stage.

General symptoms of pneumonia.—A sense of oppression in the chest, the sensation of a dull pain within, cough attended with expectoration. The expectoration is peculiar; it consists of a mixture of blood and mucous, and presents just the color that would result from such a mixture. It is very viscid, so that the vessel in which it is contained being turned upside down, the sputa will adhere to it. Dyspnoea is always present, though often in a variable degree, sometimes being very great and insupportable, at others trifling. This depends partly on the extent of the pulmonary substance affected, and partly on the constitutional peculiarities of the patient. In some individuals having a small quantity of blood in the system the whole of the pulmonary surface, it appears, is not requisite for effecting its aeration; while persons of a full and plethoric habit having a large quantity of blood circulating in the system, the whole of the lungs for arterializing it. This is evidenced in the common fact of some persons soon running out of breath after a slight exertion, and others not being similarly affected after undergoing an equal or greater amount of exertion. By the application of this principle we may readily account for the diversity in the degree of dyspnoea present in different cases of pneumonia. The first class of persons alluded to may have a given portion of their lungs inflamed without experiencing much dyspnoea, while the latter class must experience a greater of dyspnoea even from a less amount of inflammation.

A high degree of inflammatory fever, attended with hot skin and quick pulse, headache, furred tongue, constipated bowels and high-colored and scanty urine, &c. is always present in acute pneumonia.

Delirium is sometimes present in the latter stages, and when so, it is an ugly symptom for it denotes the imperfect aeration that is going on in the blood, and consequently portending asphyxia and coma to be at hand. When suppuration has taken place the expectoration becomes of a purulent character, having a putrid smell, and the patient becomes weak and depressed. Hectic fever may come on in the latter stages.

Treatment.—During early stages blood-letting is by far our most valuable remedy in pneumonia. It fulfils here a double indication; 1st, we employ it in pneumonia as we would do in the inflammation of any other important organ; and 2nd, we do so with a view to produce a particular effect upon the lungs. In fact by bleeding in pneumonia we do the same to the lungs, that in ophthalmia we would do to the eyes by excluding light, or in a case of fracture by prescribing rest to the broken limb. By this measure the amount of the pulmonary function is reduced; the quantity of blood it has to purify, is diminished, and in consequence less to exert; simultaneously with this, particular effects upon the lungs, the general effects of blood-letting are also produced upon the system.

In the 1st. stage blood-letting is to be followed by antimonials in order to depress the heart's action and bring down the force of the circulation.

In the 2nd. stage however antimonials do not prove equally serviceable, then mercurials must be had recourse to produce their specific effect upon the system, and so control and prevent the further effusion of lymph, also promote the absorption of what has already been effused. These should be combined with purgatives and other antiphlogistics. The patient should be strictly enjoined not to speak and to excrete the lung as little as possible. When the inflammation has run on to the suppurative stage, greatly weakening and depressing the patient, he must be supported by cordials and tonics and stimulants.

NOBINKISTO BOSE.

SURGERY.

1. The symptoms of stone in the bladder are the following: the patient has an irresistible inclination to pass water and that very frequently, the urine either dribbles away or passes in full stream which is often suddenly stopped by the impaction of the stone. Uneasiness and itching felt, as also uneasiness at the end of the penis thereby obliging the patient to scratch and be continually pulling at the prepuce, which consequently becomes greatly elongated, this is particularly observable in children; pain felt at the bladder—some say that retraction of the testicles is also one of the symptoms, but I think it more to be a consequent of stone or disease in the kidney than in the bladder—urine generally found mixed with mucus (and this very much looked for formerly) or blood, this is particularly seen if the patient has to exercise before making water. The way that the mucus is found in the urine is the following:

The pressure of the stone in the bladder acts as a foreign matter, in fact it is one; irritation is produced, congestion follows and with the congestion an increase of secretion of the part, viz. mucus,—the patient places himself in various positions during the passage of urine, sometimes on all fours,—this he does to avoid the severe pain experienced by the pressure or rough action of the stone in the most sensitive part of the bladder, the trigone—his countenance is anxious, sometimes there is sympathetic action going on to the rectum and kidney, which may follow and become affected. But the best, certain and sure diagnostic mark is the introduction of the sound. This is a metallic instrument of good polished steel like unto a catheter, but more sharply curved and the handle straighter—thereby affording an advantage over the catheter in enabling you to use the end more freely, and in fact almost in every direction whilst the straight portion is in the urethra, its top is flat and broad. You take one of these not too large nor too small. Nos. 7 or 8 will answer well, and commence the introduction by placing your patient in the recumbent posture, legs drawn up to relax muscles (you may make him stand if you like) with the broad portion of the sound resting on your middle and index finger and above the thumb, its convexity thereby looking forward, you hold it in that manner (having previously oiled it) and introduce it, the hand being over the anterior superior spinous process of the ilium, and as its entrance is being effected the catheter is brought to the middle line of the body over the umbilicus, whereas it is passing under the arch of the pubis it is brought forward and the position of the finger changed, the index finger now resting on the back

or convex surface of the instrument, the thumb on its side and the superior edge in the palm of the hand; in this way I have seen it done by my Professor without even once touching the penis with his other fingers. Having thus introduced the catheter, you grope about for the stone and if you are so fortunate as to find it immediately, a distinct grating or rubbing feel is communicated and at the same time a click is heard,—this is quite satisfactory. You very often may not be able to find the stone quickly, you may then change the position of the patient, or you may allow the urine to drop away gradually by the side, or through an elastic silver catheter which may be employed. This will generally be enough.

Besides the knowledge of ascertaining that a stone is in the bladder we can also say as to its size, large or small, rough or smooth, one or more.

The diseases that may be mistaken for stone in the bladder are the following: organic disease of the kidney—stone in the kidney—organic disease of the bladder—disease of the rectum—disease of the prostate—stricture.

All these organic diseases mentioned are more or less complicated with constitutional symptoms, —nature and seat of the former for instance, in the kidney, pain in the lumbar region, stone in the kidney, anterior and posterior lumbar region, pain very severe and confined to the track of the cord, retraction of the testicles, &c., in passing the sound the diagnosis is evident and clear, and I must not go any further.

In disease of the prostate the hand is very likely to be deceived, but there is that distinct click wanting so characteristic. Besides on introducing your hand into the rectum, the prostate (enlarged) can be felt.

Stricture—the diagnosis is here very simple, and I may again repeat that the passage of the sound is the means by which we could positively assert that it is stone.

2. Under circumstances so ambiguous and uncertain very probably you would say that the cause of death was by compression, the brain by extravasation, and here I may state a case of my own in the Hospital.

Case.—J. White, an European soldier, was admitted into Hospital, in a perfectly insensible state, cold body, bedewed with perspiration, eyes contracted, pulse small and frequent, there was, I might state, no external injury on the surface of the body, I carefully examined the head, arms, &c.

I ordered him to be kept warm,—on enquiring into history of the case, I ascertained that he was first picked up near the Caledonian Tavern, from where he had fallen—I could ascertain no further. Next morning re-action commenced, the patient was bled, purged, and calomel administered, all to no avail, he died a few hours afterwards.

In making a post-mortem, there was found fracture of the petrous portion of the temporal bone, and also a ziz-zag fracture of the orbital plate of the frontal bone, there was a large clot of blood forming in the anterior surface of the brain, the liver was also ruptured.

3. The causes of retention of urine may be various and numerous, as stricture, paralysis of the bladder, impaction of urethral calculi, inflammation of the neck of the bladder, enlarged prostate so as to prevent and press on the urethra, and many other trivial causes, which I do not now remember,—these, in fact, are the principal. Now as regards the treatment of each case. 1st, stricture,—this may be either of the spasmodic, inflammatory, idiopathic, or true or permanent stricture. The treatment for the first two, reduce the spasm and inflammation by means of fomentation, warm baths, opiates, enemata or boluses, laudanum internally in doses of $\mathfrak{z}\text{ss}$ at a dose. If plethoric and full, bleed him, applying leeches for the inflammatory stage and belladonna, any that may be used for the spasmodic variety. After having removed the spasm or relieved

the inflammation you introduce a catheter and withdraw the urine. In the true or permanent stricture, you must employ the catheter, gradually passing against the stricture so as to remove it,—if in these attempts you fail you must have recourse to other severe means; viz. the using a bougie with a caustic and carefully introducing it. Should these means fail, you must puncture the bladder,—this done by three ways,—1st above the pubis,—2nd. in the middle line of the perineum, and the 3rd. is through the rectum,—we may almost be assured that the first plan will often succeed, in fact invariably succeed, and we ought not, on any account, to have recourse to these dangerous and uncertain methods without trying any single remedy that has been proposed. Failing in these we ought to place every circumstance before our patient; tell him the chances of success, and if consented to operate. I do not know whether it is necessary for me to describe the operation, the question does not include it.

Paralysis of the bladder—In such cases the catheter must be our great dependant: we must at least empty the bladder twice in the 24 hours, at the same time we ought not to be inactive with the system,—apply warmth to the part, warm baths. Frictions stimulating, the internal use of strychnine and brucine in dose of $\frac{1}{8}$ to $\frac{1}{16}$ of a grain, or cantharides may be advantageously employed.

Impaction of urethral calculi.—This must be done with the knife, and excision is the cure.

Inflammation of the bulk of the bladder —Here we must act as in all cases of inflammation, bleed the patient if plethoric, apply leeches to the part, followed by fomentations to the part—purgatives, plenty of diluent drinks. In this case we must not attempt to introduce the catheter until the inflammation is subdued, then we may resort to it.

Enlarged prostrate, This is to be subdued by leeches, fomentation, &c. Some recommend excision, others iodine. Having reduced the enlargement, the urine will flow of itself.

4. Suppose there was hæmorrhage from the palmar arch, I would attempt pressure, this generally fails. Others recommend to take up the artery, this also fails, though Dr. Walker mentions a case of success in his own practice; the plan that I have been taught is to take up the brachial artery, just before its division, if the artery in the palm cannot be secured and pressure fails. I would not take up the radial or ulnar for this reason, the anastomosis is quite sufficient (being so free) to continue the hæmorrhage. We all know that the superficial palmar arch is formed by one branch of the radial (*superficialis volæ*) and the remaining of the ulnar, therefore, if the arch were wounded by one of the ulnar branches, the anastomosis into the radial branch would be sufficient to keep up the hæmorrhage, therefore, the best plan is to take up the brachial.

5. If a man gets a fall and complains of pain in the region of the hip joint, and in comparing the two limbs, one appears larger than the other; at the same time, there is great stiffness of the limb: I would conclude on finding no crepitus or dislocation, say that it was retraction of the limb by the action of the muscles, and to satisfy myself, I would take a tape and measure from one anterior superior spinous process to the tubercle of the tibia, and then I would find the two limbs agree.

6. Suppose there was mortification, I would not return the contents of the hernial sac, but divide it and make an artificial anus.

If there was strong adhesion between the parts external, and the sac in we return the sac, I would not reduce it. Under these two circumstances I would in no wise enter the cutis.

WILLIAM ELLIS.

ANATOMY.

Question 1st.—Describe the knee joint.

Answer 1st.—The knee-joint is made up of bones, ligament, semilunar cartilages, blood-vessels, nerves, and some tendons of the neighbouring muscles.

1st. The bones are the lower articulating surface of the femur, and its condyles above, and the upper articulating surface or head of the tibia below, and it presents two depressions where the two condyles of the femur at their articulating surfaces are situated, and anteriorly there is a bone named patella.

2nd. The ligaments that enter into the formation of this joint are 13 in number; 1st, anterior or the ligamentum patellæ; 2nd, posterior or the ligamentum posticum Winslowe; 3rd, internal lateral ligament; 4th, the two external lateral; 5th, anterior or external cruciate; 6th, posterior or internal cruciate; 7th, transverse; 8th and 9th, two coronary; 10th, ligamentum mucosum, ligamentum alaria, two semilunar fibro cartilages, and lastly, synovial membrane.

The first five are the external to the articulation, the next five are internal to the articulation, and the remaining three are folds of the synovial membrane, and have no title to the name of ligaments.

The anterior ligament is the prolongation of the extensor muscles of thigh downwards to the tubercle of the tibia, a little bursa is situated at its insertion.

The posterior ligament is a broad expansion of the ligamentous fibres which cover the whole of the posterior part of the joint. The internal lateral ligament is a broad and trapezoid layer of ligamentous fibres, attached above to the tubercle on the internal condyle of the femur and below to the side of the inner tuberosity of the tibia. The external lateral ligaments are two, one is long and the other is short external lateral ligament. The long external lateral ligament is a strong rounded cord, which descends from the posterior part of the tubercle upon the external condyle of the femur to the outer part of the head of the fibula. The short internal lateral ligament is an irregular fasciculus situated behind the long ligament arising from the external condyle near the origin of the head of the gastrocnemius muscle, and inserted into the posterior part of the head of the fibula.

The anterior or internal cruciate ligament arises from the depression of the head of the tibia in front of the spinous process, and passes upwards and backwards to be inserted into the inner surface of the outer condyle of the femur, as far as the posterior border.

The posterior or internal cruciate ligament arises from the depression upon the head of the tibia and passes upwards and forwards to be inserted into the inner condyle of the femur.

Transverse ligament is a small slip of fibres which extends transversely from the external semilunar cartilage near its anterior extremity, to the anterior convexity of the internal cartilage.

The coronary ligaments are the short fibres by which the convex borders of the semilunar cartilages are connected to the head of the tibia and to the ligaments surrounding the joint.

The semilunar cartilages are two falciform plates of fibro cartilage, situated around the head of the margin of the tibia, and serving to deepen the surface of articulation for the condyles of the femur.

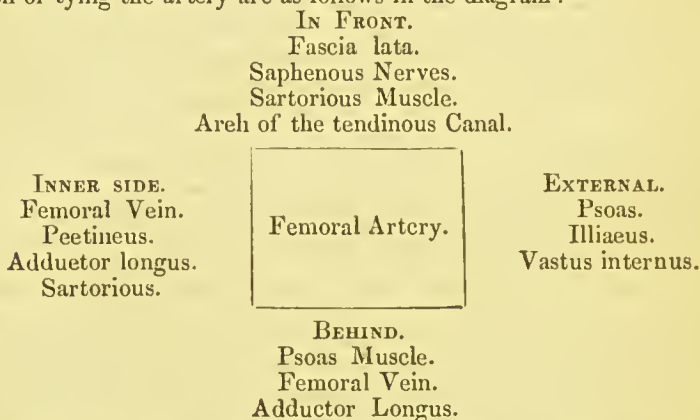
The other ligaments which merely fold of synovial membrane for which they are termed false ligaments.

Lastly, this joint is lined at its inside by synovial membrane.

This joint is supplied by vessels from the branches of the popliteal artery; there are two superior articular and two inferior articular arteries where they ramify by anastomosing with each other, and there is another branch the azygos articular which supplies the interior of the joint, again this joint is supplied by the accompanying veins which go by the same names. The nerves are from the superior branches of the posterior tibial and one more from the peroneal, and also one from the crural (popliteal).

Question 2d.—Describe the surgical anatomy of the femoral artery and its branches.

Answer 2d.—Femoral artery from beneath Poupart's ligament, the external illiac enters the thigh and becomes femoral, it passes down the inner side of the thigh from Poupart's ligament at the point midway between the anterior superior spinous process of the illium and symphysis pubis to the opening in the adductor magnus, at the junction of the middle with the inferior third of the thigh where it becomes the popliteal artery. The relations of this artery for the surgical manipulation or tying the artery are as follows in the diagram:—



The branches of femoral artery are few in number. These are, 1st, circumflex illii which is distributed in the crista of the illium; 2d, superficial epigastric distributed in the rectus; 3d, the deep pudic which is distributed into the glands; 4th, the profunda which is the largest branch of the femoral artery, it gives off two circumflex, the internal and external, and three perforating. The internal circumflex is distributed into the muscles of the inner side of the thigh and external to the outside, this again gives of three branches, the ascending, middle and descending. The last branch of the femoral artery is the anastomotica magna which is distributed in the knee-joint and anastomosing with the articular arteries.

Answer 3d.—When a needle will be passed through the globe of the eye entering the centre of the cornea, it will pass through the structures following:—

After entering into the centre of the cornea it will go into the aquaous humour, then into the crystalline lens; 3dly, into the vitrious humour and its membranes; 4thly, in the pupil, then into the capsule of the lens, then in the lens; and lastly in the retina.

Question 4th.—Inguinal hernia is of two kinds, oblique and direct; 1st, the oblique hernia—here the intestine escapes from the cavity of the abdominal ring, pressing before it pouch of peretoneum which constitutes

the hernial sac, and distending the infundibuliform process of the transversalis fascia; after emerging through the internal abdominal ring, it passes first beneath the lower border of the internal oblique muscle and finally through the external abdominal ring in the aponeurosis of the external oblique. From the transversalis muscle it receives no investment while passing beneath the lower border of the internal oblique, it obtains the cremaster muscle and upon escaping at the external abdominal ring receives the intercolumnar fascia; so that the coverings of an oblique inguinal hernia after it has emerged through the internal abdominal ring are from the surface to the intestine, 1st, the integument, then superficial fascia, intercolumnar fascia, cremaster muscle, transversalis or infundibuliform fascia, and the peritoneal sac.

The other form of inguinal hernia is the direct inguinal hernia. It has received its name from passing directly through the internal abdominal ring and forcing before it the opposing parietes; this portion of the wall of the abdomen is strengthened by the conjoined tendon of the internal oblique and transversalis muscles which is pressed before the hernia and forms one of its investments. The coverings of the direct inguinal hernia are the integument and superficial fascia, intercolumnar fascia, conjoined tendon of the internal oblique and transversalis, transversalis fascia, peritoneal sac.

Answer 5th.—The œsophagus is a slight flexuous canal inclining to the left in the neck, to the right in the upper part of the thorax, and again to the left in its course through the posterior mediastinum. It commences at the termination of the pharynx opposite the lower border of the cricoid cartilage and fifth cervical vertebra, and descends the neck behind and rather to the left of the trachea. It then passes behind the arch of aorta and along the posterior mediastinum, lying in front of the thoracic aorta to the œsophageal opening in the diaphragm where it enters the abdomen and terminates at the cardiac orifice at the stomach about a point opposite the tenth dorsal vertebra; the œsophagus is flattened and narrow in the cervical region, and cylindrical at the rest of its course; its largest diameter is met with in the lower part of its course.

Answer 6th.—Pneumogastric nerve arises by ten or fifteen filaments from the groove between the corpus olivare and corpus testiforme, immediately below the glosso pharyngeal and passes out of the skull through the inner extremity of the jugular foramen, in a distinct canal of the dura mater; while situated in this canal it presents a small rounded ganglion, and having escaped from the skull a gangliform swelling, nearly an inch in length, and surrounded by an irregular plexus of white nerves which communicate with each other with the other division of the 8th pair, and with a trunk of the pneumogastric below the ganglion. The plexus gangliformis of the superior laryngeal branch is situated at first behind the internal carotid artery, and then between the artery and the internal jugular vein; the pneumogastric nerve then descends the neck within the sheath of the carotid artery, lying behind and between the artery and the vein to the root of the neck, on the right side passes between the subclavian artery and vein to the posterior mediastinum then behind the root of the lung. To the œsophagus which it accompanies to the stomach, lying on its posterior aspect, on the left side it enters the chest parallel with the left subclavian artery, crosses the arch of the aorta, and descends behind the root of the lung and along the anterior surface of the œsophagus to the stomach.

Question 7th.—The pneumogastric nerve is a compound nerve in its nature; it performs a very important function in the process of respiration.

Question 8th.—The forces that are employed in the circulation of the blood are the contracting power of the heart and the elasticity of the middle coat of the arteries.

Answer 9th.—The muscles of the upper extremity are divided into four groups; namely, 1st, those muscles that are attached in the scapula or shoulder; 2d, those in the humerus or arm; 3d, those of the fore-arm; and 4th, those of the hand.

1st.—The muscles of the shoulder are the supra spinatus, infra spinatus, teres major and minor, subscapularis.

2d.—The muscles of the arm are the brachialis anticus, coraco brachialis, biceps, and triceps.

3d.—The muscles of the fore-arm are several in number: these are pronator radii teres, flexor carpi radialis, palmaris longus, flexor carpi ulnaris, flexor sublimis digitorum, flexor digitorum perforans, flexor pollicis longus, pronator quadratus. These are the muscles in the anterior part of the fore-arm both superficial and deep layers. The muscles of the posterior part of the fore-arm are the supinator radii longus, the supinator radii brevis, extensor digitorum communis, extensor radii carpalis, extensor primi internodii pollicis, extensor secundi internodii pollicis, anconeus.

4th.—The muscles of the hand are the abductor pollicis, flexor brevis pollicis, opponens pollicis, flexor osis metacarpi pollicis, abductor minimi digiti, abductor minimi digiti, lumbricales; these are four in number, and lastly, there are three palmar interossei and four dorsal interossei.

MUTTYLOLL GOOPTO.

ANATOMY.

Answer 1.—The knee joint is a ginglymoid or hinge-like joint, situated between the thigh and the leg. It is chiefly formed by bones, ligaments, cartilages, and synovial membrane.

The bones that enter into the formation of the joint are, the lower extremity of the femur, the patella, and the superior extremity of the tibia.

The lower part of the femur presents two condyles, separated by a deep groove. The condyles are smooth, and rounded and covered by cartilage, and rest upon the corresponding depression in the head of the tibia.

The patella is a triangular bone, the apex below and the base above. The internal surface of it is unequal and is tipped with cartilage, it forms the anterior boundary of the joint. The head of the tibia presents for examination, two articulating surfaces separated by a projection called the spine: the external articular surface is circular, and is covered by a fibro cartilage, and receives the external condyle of the femur, the internal is oval, is covered with a corresponding fibro cartilage, and receives the internal condyle of the femur. The ligaments of the knee-joint are the anterior, posterior, internal lateral, external lateral, the two cruciate, ligamentum alaria, and the ligamentum mucosae. The anterior ligament, or the ligamentum patellae is formed by the tendinous expansion of the quadriceps femoris.

The posterior ligament or the ligamentum Winslow is formed by the tendon of the semi-membranosus.

The internal lateral ligament arises from the inner surface of the condyle of the femur, and is inserted in the inner side of the tibia.

The external lateral ligament consists of two portions, one arises from the external surface of the condyle of the femur, and is inserted into the head of the fibula, the other arises from the same, but inserted into the tibia, anterior to the last. The cruciate ligaments are two in number—

one anterior the other posterior, the anterior arises from the anterior part of the spine of the tibia, and is inserted into the posterior part of the groove between the condyles: the posterior crucial arises from the posterior part of the spine of the tibia and is inserted into the internal part of the external condyle.

Cartilages.—The fibro cartilages are two in number, they occupy the articular surface of the tibia, the external is circular, the internal is ovale. Besides these two, there are cartilages covering the condyles, and the inner surface of the patalla.

Synovial Membrane.—This is seen covering the fibro cartilages, and is reflected to the condyles of the femur. The use of it is to secrete synovia, for the lubrication of the joint.

Blood vessels and nerves.—The knee joint is supplied chiefly by blood vessels from the popliteal artery, and nerves from the crural, or popliteal.

Answer 2.—The femoral artery commences from the lower edge of Popart's ligament, descends obliquely downwards and inwards as far as the popliteal space, where it becomes the popliteal.

It is divided into three stages, the first or superior, the second or middle, and the third or inferior.

1st Stage.—In this stage, it is covered anteriorly by the skin, superficial fascia, eribriform fascia, and the inguinal glands. Internally it is bounded by the vein, which gradually becomes posterior. External to the artery in this stage, we have first the iliac portion of the fasciae lata, and the erural nerve is external to it. It lies upon the pectineus and psoas, and illiacus externally, these muscles are covered by the middle portion of the fasciae lata.

In this stage, it gives the following branches, 1st, the 2d or 3d inguinal branches, distributed internally to the inguinal glands; 2d the superficial epigastric passes upwards beneath the skin; 3d, the external circumflex ilii passes outwards between the skin and psoas muscles, then beneath the rectus femoris, and is distributed to the external surface of the illium.

4th.—The profunda, it arises from the posterior and external part of the femoral artery, 2 inches below Popart's ligament, descends downwards between the deep and superficial layer of muscles and divides into five branches; viz. the two circumflex, and the three perforating arteries, the external circumflex passes outwards beneath the tensor vaginae femoris, then passes outwards and upwards, and supplies the gluteal muscles, and inosculates with the gluteal artery. The internal circumflex passes between the adductors, and supplies the muscles of the internal part of the thigh.

The superior perforating artery passes inwards, perforates the adductors and is distributed to the vastus internus and adductor magnus.

The middle passes in the same direction, and is distributed over the adductor longus.

The inferior perforating descends a long way, and is then distributed in the muscles of the inner side of the thigh.

2nd Stage.—In this stage it is covered by the skin, superficial fascia and the sartorius muscle, the femoral vein is posterior to the artery it lies upon, between the vastus internus and the rectus femoris, in this situation sometimes the perforating arteries are given off.

3rd Stage.—In this stage it is covered by the skin and fasciae, it passes through a tendonous ring in the adductor magnus, it lies between the sartorius and vastus internus and inferiorly by the adductor longus and vastus internus, in this situation it gives off the anastomotica magna, which is distributed into the inferior part of the femur.

Answer 3rd.—If a needle be passed through the globe of the eye, entering the centre of the cornea, it will pass through the following structures.

1st.—The mucus membrane lining the cornea; 2nd, through the external layer of the cornea; 3rd, the fluid between the two layers; then 4th, through the internal layer; 5th, through the membrane of the aqueous humor; 6th, through the aqueous humor itself; 7th, posterior part of the aqueous humour; 8th, capsule of the lens; 9th, the lens; 10th, the posterior part of the capsule; 11th, hyaloid membrane; 12th, vitreous humor; 13th, posterior part of the hyaloid membrane; 14th, retina; 15th, choroid membrane; 16th, sclerotic coat posteriorly.

Answer 4th.—*Inguinal Hernia.*—In this disease, a part of the contents of the abdomen comes out from its natural position either through internal abdominal ring, and then through inguinal canal, or if it be direct directly through the external abdominal ring.

The parts implicated in this disease are, 1st, the skin; 2nd, the superficial fascia which arises from the Popart's ligament, upwards it is thin, and transparent, and is sometimes thick and strong in cases of hernia, then the scarpas fascia, described by Scarpa; it lies upon the tendon of the external oblique muscle; the next is the tendon of the external oblique, is attached inferiorly to the Popart's ligament, and internally to the mesian line, next is the spermatic chord and the crymaster muscle, then the fascia infundibuliformis, arising from the fascia transversalis, round the internal abdominal ring; next is the conjoint tendon of the internal oblique and transversalis muscles, next is the fascia transversalis, which lies between the fascia transversalis and the peritoneum, in it the internal abdominal ring is situated, next is the peritoneum.

External Abdominal Ring.—This ring is formed by the tendon of the external oblique muscle, it lies midway between the umbilicus and the pubis.

It is bounded anteriorly by the skin, superficial fascia, intercolumnal bands, and intercolumnal fascia.

The intercolumnal bands are tendonous fibres pass from Popart's ligament upwards crossing the ring, the ring is impervious by a fascia, called the ring intercolumnal fascia, or fascia propria of the chord.

The internal abdominal ring is formed by the transversalis fascia; it is also impervious, as there is also a prolongation of the fascia, called the fascia infundibulum.

Inguinal Canal.—Between the two rings above described is the inguinal canal. It is bounded anteriorly by the skin, fascia tendon of the external oblique muscle, superiorly by the fleshy fibres of the internal oblique, and transversalis muscles, posteriorly by the conjoint tendon of the internal oblique and transversalis, and the transversalis fascia inferiorly by the external abdominal ring.

This canal is occupied by the spermatic chord and the crymaster muscle.

Epigastric Artery.—This artery passes from internal iliac towards the umbilicus between the peritoncum and the fascia transversalis; in oblique inguinal hernia, it lies internal to the hernial sac, but in direct inguinal hernia it lies external.

Coverings of the Oblique Inguinal Hernia.—Skin, superficial fascia, intercolumnal fascia, crymaster muscle, fascia infundibulum and the peritoneum. In direct inguinal hernia, the coverings are, the superficial fascia, skin, fascia propria, and the peritoneum.

Answer 5th.—The esophagus commences from the lower part of the pharynx anterior to the body of the fourth or fifth vertebra, and terminates in the cardiac orifice of the stomach in front of the fifth dorsal vertebra.

In the superior part it lies behind the trachea, and between the carotid arteries and jugular veins, it then passes between the lungs, passes also in front of the aorta, which lies in the posterior mediastinum, external and posterior to it, inferiorly, the par vagum passes, one in front, and the other behind the esophagus, continuing till it terminates in the stomach.

Answer 6th.—It arises from the fissure between the olivary and restiformis, comes out of the *brain* through the foramen lacerum posterius, passes beneath the sheath of the carotid artery till it enters the thorax, and at the root of the lungs it divides into two branches, one which subdivides into several braches, and distributes into the lungs, the other takes the course of the esophagus, in the inferior part of which the left posterior and the right anterior to the esophagus, it distributes itself in the stomach.

Branches of the division of the nerve which goes to the lungs; the superior and inferior laryngeal, esophageal and cardiac plexus.

Answer 7th.—The pneumogastrie gives sensation to the stomach, by which the process of digestion goes by the secretion of the gastric juice; by it, some say, hunger is excited. It also assists in producing voice, giving motion to the parynx, it is a compound nerve, and there it gives sensation and motion.

Answer 8th.—The forces employed in the circulation of blood, are first the action of the heart, namely, the alternate dilation and contraction of the organ; second, by the contraction of arteries; third, by capillary attraction; fourthly, by the exertion of the muscular system, mechanically producing the effect.

Answer 9th.—The muscles of the upper extremity may be classed into three. Those of the arm, fore-arm and hand.

Muscles of the arm.—Groat and lesser pectoral anteriorly; superiorly, levator angul scapuli, trapezius, romboideus major, and minor, supra and infra spinatus, teres major, and minor, sub-scapular, serratus magnus deltoid, coraco brachialis, brachialis anticus—biceps, triceps, anconeus.

Muscles of the fore-arm.—Pronator radii teres, flexor carpi radialis, flexor profundus perforans, flexor carpii ulnaris, flexor digittorum sublimis, palmaris longus.

Supinator radii longus, spinator radii brevis, extensor metacarpii pollicis, extensor secundi internodii pollicis, extensor indicis, quadratus pronator, extensor carpii longior and brevior, extensor digitorum communis, extensor carpii ulnaris.

Muscles of the hand.—Abductor pollicis, adductor pollicis, flexor brevis pollicis, adductor indicis, opouens pollicis, abductor minimi digiti, adductor minimi digiti, flexor brevis minimi digiti.

The four lumbricales and the three interosii.

SREENATH MOOKERJEA.

MEDICAL JURISPRUDENCE.

Answer to Question 1st.—The diseases which are liable to be mistaken for irritant poisoning are cholera; distention. rupture, perforation, and inflammation of the stomach, rupture of the duodenum, the biliary duets, the uterus, or any other organ contained in the abdomen; inflammation, perforation and intussusception of the intestines, inflammation of the peritoneum and bladder, drinking iced or cold liquids while heated, and in this country the malignant form of hæmorrhagic dysentery. Cholera is very apt to be mistaken for irritant poisoning, but not

by an observant or careful practitioner. It may be distinguished from it by not producing any acrid sensations in the mouth or throat, no constriction or any other such abnormal feelings, by the vomiting not being bloody, by the stools being liquid (I mean of that peculiar congee or leaden hue appearance) which is observed in no cases of irritant poisoning, and lastly from the post mortem appearances. Distention and rupture of the stomach are known from irritant poisoning, by the post mortem appearances. This is the positive mode of distinguishing them, but they may be known too from the rapid and instantaneous dissolution they produce. This is the case with only a few irritant poisons and in these last, signs of inflammation are seen which are not observable in the former. I may here perhaps be allowed to state that the distention or rupture does not occur simply from taking large quantities of food or drinks. It may occur also from the sudden evolution of gases, as was very nearly the case in an individual who took down solutions of carbonate of soda and tartaric acid in separate draughts. It may take place likewise from eating an undue quantity of indigestible substances, or substances that are liable to take on gaseous forms as in the case of a soldier who eat a large quantity of dough.

Perforation of the stomach is usually the result of disease, yet it may and has occurred in cases of irritant poisons. From these it is to be distinguished by the nature of the case and the perforation, thus should it occur to an individual shortly after his having taken a meal or draught, and on dissection the stomach be found inflamed and similar ulcerations in other portions of it be found likewise, and to crown all, if the poison itself can be detected by analysis, we are then justified in stating it to have resulted from an irritant poison. But on the other hand if we are made aware that the individual was much depressed in mind, &c. &c., and on dissection we fail to observe inflammatory characters, we fail to observe any peculiar thickening of the coats, and moreover, in the perforation itself, if we fail to see any trace of ecchymosis, softening of the membranes, &c. &c., we may say with decision that it was not a case of irritant poisoning.

Inflammation of the stomach is however a disease which cannot be so easily distinguished from a case of irritant poisoning. Why it should be so is clear when we reflect that it itself takes a prominent part in the symptoms of an irritant poison. But gastritis is very rarely of an idiopathic nature. It occurs, according to a French author, once in 6,000 cases of secondary gastritis. It again never takes place *suddenly*, but its symptoms usually increase gradually, so that we can trace the disease through its various gradations. Thus we find in a case of idiopathic gastritis has an increased appetite before irritability of the organ sets in, and we can seldom observe excoriations, inflammations, or ulcerations in the mouth, throat and gullet—not so in irritant poisons. The symptoms usually set in without any of these premonitory symptoms of increased appetite, &c. &c. The post mortem appearances may likewise aid us, thus though the stomach may be affected, yet the other termination of the intestinal canal may also develop traces of irritation; together with these the chemical analysis, suspicious conduct of the accused, &c. &c., must be applied to help us.

Rupture of the biliary ducts, the duodenum, the uterus, &c. &c., are diseases which rank with rupture, and distension of the stomach being distinguished chiefly by the post mortem appearances.

Inflammation of the intestines may be known by the peculiar stercoraceous matters being vomited, by the pain in the intestines not coming

on secondarily, &c. &c. The remarks which were made on gastritis apply also to enteritis.

Perforation of the intestines is an appearance which is often met with in cases of irritant poisons; but the peculiar nature of the perforation and of its occurrence after a poisonous draught or meal being taken, &c. &c., or otherwise are circumstances which will enable us to say with precision the true nature of the case.

Intussusception of the intestines is known by a post mortem examination.

Peritonitis is a result also of irritant poisoning, but seldom a direct one, being usually attendant on perforations of the stomach or intestines. It is a disease which cannot well be confounded with irritant poisoning, inasmuch as there is seldom any vomiting or diarrhœa present. Besides there is no occurrence of gastritis or enteritis during the course of the disease—and if with these we throw post mortem appearances, and the failure of the production of chemical irritants, I say, if we throw these into the scale, we shall find the preponderance to be so great as not to lead us easily away.

Cystitis is also a product of an irritant poison, but it is rarely present singly, except in cases where substances acting directly on it, have been taken as cantharides, &c. But even in these it is seldom confined to the bladder alone, the intestines and other organs partake of inflammation more or less. The distinguishing points in this are the same as in peritonitis.

Drinking cold liquids while heated is very liable to be mistaken for irritant poisoning, inasmuch as the result takes place after the taking a draught. But the state of the symptoms, the circumstances under which the draught was taken, the non-presentation of post mortem appearances, will enable us to say at once what the nature of the case may be. It is true that a redness of the mucous coat of the stomach, &c. has been often seen, but these are isolated appearances, unstrengthened by the usual train that accompany a case of irritant poisoning.

Hæmorrhagic dysentery cannot long be mistaken for a case of irritant poisoning, inasmuch as the symptoms and the post mortem appearances are not altogether the same as those of irritant poisoning. The circumstances too of the patient having been exposed to wet, to sudden heat or cold, to having lain in a drain, &c. &c., likewise aid us.

Answer to Question 2nd.—The answer to this question has been somewhat premised in the preceding reply. In addition I may state that when the perforation occurs as the result of disease it is usually preceded by the symptoms peculiar to cancer of the stomach, such as retching, loss of appetite, emaciation, depression of mind, pain in the hypochondriac region, &c. &c.

The mineral acids and caustic alkalis usually char the stomach, removing sometimes large portions of the mucous membranes, there is great constriction of the throat and gullet. The mouth and fauces are affected similarly as the stomach. There is usually great ecchymosis and the blood vessels around the perforation can be emptied of their blood by pressure, which is not the case in ulceration occurring from disease. There are also patches of lymph seen. The edges of the perforation from irritant poisoning are jagged, the membranes being agglutinated together by strata of lymph and they seldom present the dark color which occurs in ulceration by disease. In ulceration by disease the ulcer appears as if it were scooped out, the edges are of a peculiar color. The membranes softened just at the

edges, but surrounding this they are thickened and raised, and further still the inflammatory blush is seen. This is not the case in irritant poisoning, the edges are softened (just the same as when we apply potassa fusa to the skin) and there is no thickened ring surrounding it, at least it is not so high nor so distinct as in the other case.

Answer to Question 3d.—The symptoms of poisoning by arsenious acid are of two varieties, viz., narcotic and irritant. They commence with a feeling of faintness, nausea, and vomiting. The countenance becomes flushed and anxious, and there is a sense of constriction about the gullet, with shooting pains in that region and in the mouth. The matters vomited are first the natural contents of the stomach, to this succeeds frothy thick mucus, streaked with blood, and eventually they are discolored with the presence of bile. This is followed by an intolerable burning pain in the hypochondriac region, so great that the pressure of the hand causes extreme agony. To this succeeds great prostration, extreme thirst, a pinched state of the features, jactitation, a hard wiry and incompressible pulse, and diarrhœa. Sometimes instead of diarrhœa there is tenesmus and slimy stools mixed with blood (as is seen in the early stages of dysentery)—often the urine is suppressed. These symptoms are followed by a profuse clammy perspiration, a cold and shrunken state of the skin, and by collapse. More generally, convulsions set in with delirium and death occurs by coma.

The post mortem appearances observed are redness and inflammation of the stomach, sometimes patches of ecchymosis, but rarely ulcerations, the same may be said about the mouth, throat, and esophagus. The inflammation extends in some cases to the duodenum, but seldom extends to jejunum. The small intestines are generally not affected. The rectum, however, sympathises with the stomach, and similar changes occur in it. The anus is often excoriated. The bladder too is found inflamed, together with these we sometimes see an erythematous state of the skin particularly about the throat, and ulcerations of the intestines are occasionally to be met with.

The treatment for poisoning by arsenious acid is first to get rid of the arsenic from the stomach. For this purpose, I think, the best thing is the stomach pump, and the water is to be injected with some force, owing to the degree of tenacity with which the arsenic adheres to the stomach; but I have not seen it recommended. At all events, if vomiting has not occurred we may induce it by giving large draughts of tepid water, irritating the fauces with a feather, &c., or by giving an emetic at once, such as the sulphate of zinc. As soon as we have procured a free evacuation of the poison, we may give the antidote, the hydrated sesqui oxide of iron. There is great discrepancy of opinion regarding its use, particularly as it is found that eight or ten parts of it are required to neutralise one of arsenious acid; with this there is another objection which is that the arsenite of iron which is formed is itself a poison. But whatever degree of truth exists respecting these statements still facts ought to take the precedence of theory, and as the administration of it has proved beneficial, it ought certainly not to be set aside—Dr. Christison is unable to account for its beneficial effects, but do the absorption of the iron and the ammonia which is always present, in no way aid it? We are aware that in inflammation there is an increase of fibrin and a diminution of the red corpuscles, we know too the effect of the absorption of iron is to increase the number of the red globules, and the absorption takes place at a time just as it is necessary, when the system feels that great degree of prostration after vomiting and needs a tonic.

After the evacuation of the poison we are to use antiphlogistic measures according to the nature of the case, bleeding in those cases where it seems necessary to do so. We may give at the same time bland mucilaginous drinks should the patient be very thirsty—when the inflammation is somewhat reduced we may give some hypnotics, such as hyosciamus to soothe the system. If the anus is much excoriated and there is tenesmus we may place a suppository within it. The diet of the patient at first must be easily digested, as farinaceous food. If the stomach in the first instance be very irritable and there is great pain, we may apply a number of leeches and follow this by fomentation.

The *modus operandi* of arsenic is chiefly through the medium of absorption. The blood becoming charged with it it supplies it to the nerves. This accounts for its narcotic property. In a short time however it is eliminated by the kidneys, and this accounts for the inflammation and irritation that we find in the urinary passages.

Answer to Question 4th.—The tests applied for the detection are those of Christison, Marsh, and Reinsch.

Christison's test consists in diluting the suspected solution with one-tenth its weight of dilute hydrochloric acid. The solution is then filtered and hydrosulphuric acid gas is passed through. If any arsenic be present, the solution assumes a yellow color, and the precipitate is collected on a filter. It is next mixed with an equal quantity of black flux or recently ignited charcoal. The test tube is heated over a spirit lamp. The orpiment is reduced to a metallic form by this process and sticks to the sides of the tube. Its characteristics are that it presents outside or the side next to the glass a beautiful polished appearance, resembling polished steel, but darker in color. The side inside the tube, or that opposite the glass has a beautiful crystalline appearance like the fracture of cast iron. The fallacy to this is that charcoal sometimes presents the same appearance but the brilliant polish is needed. This is next cut and another tube is placed over it, it is gently heated, the flame of the lamp not being larger than that of a pea, and a white fume is observed which is chased up and down the tube. On being allowed to settle it crystallises in the form of triangular facets. The tube is next cut, and the contents dissolved in distilled water with the aid of a gentle heat, and the usual chemical reagents are applied. The first of these is ammonio-nitrate of silver. This produces a lemon yellow precipitate, the arsenite of silver.

This is also produced by cadmium, and also a preparation of tin, the name I forget.

The next reagent is ammonio-sulphate of copper. The colour of the precipitate is of a peculiar grass-green, termed Scheele's green.

The last reagent is the sulphuretted hydrogen gas which as stated before gives a peculiar yellow appearance—hydro-sulphuret of ammonia may be used in lieu of the gas.

Marsh's test consists in diluting the suspected solution with sulphuric acid, and throwing a piece of pure zinc into it, arseniuretted hydrogen gas is evolved, and on lighting it, it gives a leaden or lambent flame—a plate of China is placed over it. If it be in contact with the flame, the result is a black crust. Inside it is a shining ring of metallic arsenic and further out the arsenious acid is seen. The black crust or fly-powder is the oxide of arsenic. If the plate of China be held higher no ring is produced; but the arsenious acid is simply deposited.

The fallacy of Marsh's test is the presence of arsenic in either the sulphuric acid, the zinc, or in the nozzle of an old or once used Marsh's apparatus.

Reinsch's process is in diluting the solution with one-tenth its weight of dilute hydrochloric acid. The solution is then heated, and bright metallic plates of copper are thrown in. If any arsenic be present the plates are crusted with a white crust. They are then cut up and submitted to reduction as in Christison's process.

Answer to Question 5th.—The diseases which simulate or may be mistaken for narcotic poisoning are apoplexy—epilepsy—coup-de-soleil or the sun stroke—concussion—compression.

Apoplexy is usually preceded by premonitory symptoms, such as ringing in the ears, loss of sight, epistaxis, dizziness, &c. &c. When it occurs gradually, we can scarcely distinguish it from narcotic poisons. It is sometimes accompanied by violent convulsions. It usually takes place suddenly, generally while an individual is taking his dinner or after it. In such cases it is easily recognised by the blood-shot appearance of the eyes, by foaming at the mouth, by the violent convulsions and subsequent paralysis.

Epilepsy is distinguished from apoplexy by being usually preceded by an uncouthly shriek, by the want of the stertorous breathing, and by the want of the subsequent paralysis after the convulsions. The patient usually recovers within a short time after the attack, and is able to state his complaint.

Coup-de-soleil is usually known by the red or flushed face, and by the fact of the individual having been in the sun.

Concussion is usually produced by a blow or a fall. The patient *can* be roused if spoken to loudly, if pinched, he moves away, the pupils are dilated, but generally natural, the skin cold, &c. &c.

Compression is produced by the same causes; but the signs characteristic of it are that the patient *cannot* be roused, the breathing is stertorous, the pupils contracted, the skin cold.

Answer to Question 6th.—The symptoms of poisonous doses of opium are giddiness and stupor. There is little or no exciting stage present in it. The individual has a strong desire for sleep, the pupils are natural, and the features wear an expression of calm and perfect repose. By and by the pulse becomes small and slow, the muscles relax, the pupils contract, and the features have a ghastly look. The skin becomes cold, the patient cannot be roused, and if no assistance be rendered, he usually dies comatose.

In poisoning by alcohol there is present usually the exciting stage. The features have not that ghastly look, the turgid countenance, and the pupils are dilated. By these and the smell of liquor it is usually distinguished.

From concussion it is usually distinguished by the patient's being roused if loudly spoken to, by the dilation of the pupils, by a want of the relaxed state of the muscles, by the want of the stertorous breathing, by the pulse of the patient rising if spoken to, by the beating of the carotids.

From compression it is distinguished by the presence of vomiting in some cases, and by the presence of an injury, such as the fracture of the skull, and by the fact of its having occurred by a blow or a fall. With these there is no ghastly look about the patient, and by the presence in some cases of blood from the ears, nose and mouth, and also by the want of a smell of spirits from the patient's mouth, together with these the sphincters are relaxed while the urine is retained in the bladder.

Though I have stated these, yet it is not easy in all cases to distinguish them, as all are the result of coma, I mean when all three are in an advanced stage.

Answer to Question 7th.—The treatment of poisoning by alcohol and opium consists first in the evacuation or removal of the poison from the stomach and eventually the counteraction of the narcotic effects.

For the first indication a stomach pump is used and the fluid drawn away, gently and with care. In one case, blood was drawn, but this was owing to the gross neglect of the assistant who forgot to alter the situation of the tube when he met with resistance in the use of the pump; after having drawn away the poisonous liquid, tepid water ought to be injected (with force so as to dislodge any opium, &c., that may adhere to the coats of the stomach) and pumped out again. The whole of the liquid cannot be drawn off, nor ought we to be very anxious about it. This operation may be repeated if required. If no stomach pump is at hand, we may take a flexible tube and attach a bladder to it and use it on the principle of the “siphon.”

When this is not available we have recourse to emetics, and of these the best are sulphate of zinc, sulphate of copper, and common mustard. There is an objection to the sulphate of copper as it may itself prove poisonous. The same does not apply to the sulphate of zinc as in a case at which I lately assisted, four doses or two drachms were given without producing any bad effects. Sometimes, and particularly if some time has passed since the introduction of the poison, the stomach becomes torpid and will not act. In such cases we must assist the emetic effects by tickling the fauces with a feather, &c., and causing the patient to drink large quantities of tepid water—while these are going on, we make the patient trot up and down a room between two persons and splash cold water on his or her face; when the patient has been somewhat fatigued we give some stimulants as hartshorn, sal volatile, ether, brandy, &c., small quantities of these with water. Of the above remedies none is so efficacious as the trotting up and down and the cold affusion. In the case mentioned above to which I was called, the symptoms had become so aggravated that the application of ammonia to the nostrils failed to rouse the patient. This, however, was quickly produced by smart splashings of water across the face. Should the symptoms run to that pitch that the patient becomes comatose, and respiration is nearly at an end, we should inflate the lungs artificially. Many cases are on record in which recovery has taken place from it alone.

H. WILKIN JONES.

Appendix E.

PRIZES AND CERTIFICATES OF HONOUR.

Anatomy and Physiology.

The Government Gold Medal, and First Certificate,

MUTTYLOLL GUPTO.

The Rustomjee Medal, and Second Certificate,

SREENAUTH MOOKERJEE 1ST.

First Silver Medal, and Third Certificate,

M. COVINGTON.

CERTIFICATES OF HONOUR.

4th, H. W. Jones.	6th, Omes Chunder Mitter.
5th, Shib Chunder Bysack.	7th, Mahomed Jaun.
8th, Nubbogopaul Ghosaul.	

Chemistry.

Gold Medal, and First Certificate,

CHUNDER COOMAR DEB.

CERTIFICATES OF HONOUR.

2nd, Mahomed Jaun.	4th, G. A. Daly.
3rd, James Hinder.	5th, Dinnonath Doss.
6th, Abdool Humeed (Second.)	

Botany.*Gold Medal, and First Certificate,*

DINNONATH DOSS.

CERTIFICATES OF HONOUR.

2nd, C. E. Raddock.	5th, Chunder Coomar Deb.
3rd, Sreenath Ghose.	6th, Hosein Ali Khan.
4th, Mahomed Jaun.	7th, Brijonath Bundoo.

Medicine.*Gold Medal, and First Certificate,*

NOBINKRISTO BOSE.

CERTIFICATES OF HONOUR.

2nd, E. Loftus.	5th, H. W. Jones.
3rd, W. J. Ellis.	6th, Radanauth Chuckerbutty.
4th, Nubbogopaul Ghosal.	7th, C. E. Raddock.
8th, J. W. Marganout.	

Clinical Prize,

E. LOFTUS.

Surgery.

Gold Medal, and First Certificate,

W. J. ELLIS.

CERTIFICATES OF HONOUR.

2nd, Nobinchunder Bose.	|	4th, H. W. Jones.
3rd, Cally Comar Doss.	|	5th, Sreenauth Mookerjee, 1st.
6th, C. E. Raddock.		

Dresser's Prize,

FRED. J. PETTINGAL.

Midwifery.

Gold Medal, and First Certificate,

NOBINKRISTO BOSE.*

Second Certificate, and Goodeve Scholarship,

NOBIN CHUNDER BOSE.

CERTIFICATES OF HONOUR.

3rd, Chunder Coomar Bose.	|	4th, Radhanath Chuckerbutty.
5th, Kally Doss Nundy.		

* As the Gold Medal was gained by Nobinkristo Bose in 1847, and in accordance with the practice of Europe the same prize cannot be gained by the same person a second time, the Medal was transferred to Nobin Chunder Bose.

Materia Medica.*Gold Medal, and First Certificate,*

NOBINKRISTO BOSE.

CERTIFICATES OF HONOUR.

2nd, H. W. Jones.	5th, Cally Coomar Doss.
3rd, Nubbogopaul Ghosaul.	6th, Kally Doss Nundy.
4th, J. Anthoniz.	7th, M. Covington.

Medical Jurisprudence.*Gold Medal, and First Certificate,*

H. W. JONES,	} Equal.
NOBINKRISTO BOSE,*	

CERTIFICATES OF HONOUR.

3rd, Bholanath Doss.	5th, W. J. Ellis.
4th, J. W. Manganout.	6th, Cally Coomar Doss.

* Nobinkristo Bose having gained the Gold Medal last year, it was awarded to Mr. Jones, but it was very difficult to decide between the replies of the two students named.

MILITARY CLASS.

Final Students.

Gold Medal, and First Certificate,
SHAIKH KUREEM BUX, (SECOND).

Silver Medal, and Second Certificate,*
MIRZA MAHOMED JAUN.

Third Prize, and Certificate,
MEER HEDYUT ALI.

Second Class.

Silver Medal,
ROOMEE KHAN.

Prizes of Books.

1st, Ramzan Ali, 3d. | 2nd, Shaikh Jaun Ali.
3rd, Syud Emm Ali.

Junior Class.

Prize,
SOUBAN KHAN.

Assamese Students.

Prizes of Books.

1st, Dyah Singh. | 2nd, Akbur Ali.

FRED. J. MOUAT, M. D.

Secretary.

Medical College, April 8, 1848.

* For the best anatomical preparation of the blood vessels.

The Hon. Sir C. Herbert Maddock's Prizes.**First Prize,*

FRED. J. PETTINGAL.

Second Prize,

NOBINKRISTO BOSE.

* The prizes consisted of handsome cases of Surgical Instruments.

Appendix F.

Return of Morbid and other preparations added to the Medical College Museum, during the Years 1846-47, and 1847-48.

APPENDIX F.

XCV

Museum Number.	Date.	Name of Donors.	Nature of Preparations.	Case sent or not.
1308	31st March 1846 ..	Mr. G. Daly, House Surg.	A drawing of the preparation, No. 1043.	Vide letter No. 1309.
1309	31st March 1846 ..	Dr. W. Turnbull	Large intestines affected with acute dysentery	
1310	13th April 1846 ..	Nilmoney Dutt Sub-As- sistant Surgeon, Poorie	{ A fibro cartilaginous tumour removed from the supra orbital region of a female	Case No. 1310.
1311	17th April 1846 ..	Tarachand Raie, Sub-As- sistant Surgeon	{ Eight urinary calculi.	
1312	24th April 1846 ..	Dr. Mouat	The brain of a deer, olfactory bulbs preserved.	
1313	24th April 1846 ..	Prof. O'Shaughnessy ..	Carotid aneurism in a Native	Case No. 1313.
1314	24th April 1846 ..	Tameez Khan, student ..	Hypertrophy of heart with disease of valves	No case.
1315	24th April 1846 ..	Dr. Mouat	A collection of shells, about 100 in number	
1316	24th April 1846 ..	Prof. O'Shaughnessy ..	Leg amputated, Female Hospital	No case.
1317	27th May 1846 ..	Professor Stewart	{ Heart of a native woman, chronic endo-pericarditis obstruction of both auriculo ventricular openings	Case Tameez Khan.
1318	21st May 1846 ..	Professor Stewart	Ruptured bladder of a Christian female	Case Tameez Khan.
1319	16th May 1846 ..	Professor Stewart	Ovarian cyst	
1320	16th May 1846 ..	Dr. Mouat	A collection of snakes and other reptiles.	
1321	16th May 1845 ..	Dr. Mouat	A hippocampus.	
1322	16th May 1846 ..	Dr. T. Oxley, of Singapore	Scirrhous of the testicle from a Chinese	No. 1322 to 1334.
1323	16th May 1846 ..	Dr. T. Oxley, of Singapore	Ulcerations of the small intestines.	
1324	16th May 1846 ..	Dr. T. Oxley, of Singapore	Ulceration of the cornea	Case.
1326	16th May 1846 ..	Dr. T. Oxley, of Singapore	Tubercular deposition in the mesentery.	
1329	16th May 1845 ..	Dr. T. Oxley, of Singapore	Anchylolosis of the hip joint.	
1330	16th May 1846 ..	Dr. T. Oxley, of Singapore	Fracture of the scapula.	

*Return of Morbid and other preparations added to the Medical College Museum, during the
Years 1846-1847 and 1847-48.—(Continued.)*

Museum Number.	Date.	Name of Donors.	Nature of Preparations.	Case sent or not.
1331	16th May 1846 ...	Dr. T. Oxley, of Singapore	Diseased bones of the leg and foot.	
1332	16th May 1846 ...	Dr. T. Oxley, of Singapore	Perforation of duodenum by lumbricus teres.	
1334	2d June 1846	Mr. F. J. Pettingal, student	Preputial Calculus.	
1335	2d June 1846	Dr. Green, of Howrah ...	Diseased spinal cord	Case.
1336	2d June 1846	Prof. R. O'Shaughnessy ...	Fracture of the femur external to the capsule	Case No. 1336.
1337	5th June 1846	Prof. R. O'Shaughnessy ...	Cartes, of the lower jaw of a European girl	No case.
1338	5th June 1846	Tameez Khan, student ...	Excise cancerous breast of a Native female	Case.
1339	5th June 1849	Professor Webb	Female organs of an orang-outang.	
1342	15th June 1846 ...	Professor Webb	Muscles of the larynx from the orang-outang.	
1343	17th June 1846 ...	Mr. J. Shectz	A species of insect, from China.	
1345	26th June 1846 ...	Mr. S. Forbes, Student ...	The lower end of the femur showing bony texture.	
1346	26th June 1846 ...	Prof. R. O'Shaughnessy ...	Fractured spiculæ of bones from femur	Case.
1347	26th June 1846 ...	Prof. R. O'Shaughnessy ...	Necrosis extracted, from ulna	Case.
1348	{ 26th June 1846 ...	Dr. Mouat, Madras	Left kidney enlarged with granular degeneration.	
1349		Dr. Mouat, Madras	Portion of ilium ulcerated.	
1350	26th June 1846 ...	Dr. Mouat, Madras	An acephalus monster (puppy.)	
1351	26th June 1846 ...	Professor Webb	Sphacelus of the bronchial—tubes.	
1353	13th July 1846 ...	Mr. P. A. Minas student, ...	A scull to show the external walls of the nasal fossa.	
1354	14th July 1846 ...	Mr. P. A. Minas student, ...	A Skeleton of a Negro.	
1355	14th July 1846 ...	Professor Webb	Ulcerated uterus (on the posterior wall.)	
1356	20th July 1846 ...	Tameez Khan, student ...		

1357 to 1363 1364 1365 to 1371	22d July 1846 ... 24th July 1846 ... 25th July 1846 ..	Dr. Green of Howrah ... Prof. R. O'Shaughnessy ... Mr. P. A. Minas, student	{ Heart with diseased aorta, { Calculi vesicæ, Seven human skulls, (Bengalces.)	Case. By Mr. C. P. Markus.
1372	25th July 1846 ..	Mr. P. A. Minas, student	Frontal portion of the skull to show the nasal fossa.	
1373	3d August 1846 ...	Mr. F. J. Pettingal, student	{ Anterior part of the skull showing the complete { absorption of all the alveolar processes.	
1374	3d August 1846 ...	Mr. F. J. Pettingal, student	Fractured femur of a fowl.	
1375	3d August 1846 ...	Mr. P. A. Minas, student	Sphenoid and ethmoid bones attached.	
1376	3d August 1846 ...	Professor Webb	Diseased bones of the right foot.	Case.
1377	5th August 1846 ...	Jadubchunder Ghose, stud.	Omental hernia	
1378	5th August 1846 ...	Professor Webb	{ Thoracic and abdominal viscera of a bear with the { spine attached.	
1379	5th August 1846 ...	Professor Webb	Abscess of the liver and kidney taken from the Ourang, { ulceration of the diaphragm and sphacelus of the { œsophagus.	Case.
1380	5th August 1846 ...	Tameez Khan, student ...	Heart shewing incipient aneurism	Case.
1381	13th August 1846	Dr. Green, Howrah	A leg, amputated during a mesmeric trance	No case.
1382	13th August 1846	Dr. Esdaile	An ovary to show the corpus luteum	Case.
1383	13th August 1846	Tameez Khan, student ...	Aneurism of the arch of the aorta.	
1384	14th August 1846	John Murray, Esq., M.D.	An adipose tumour of the left shoulder,	Case.
1385	14th August 1846	Jadubchunder Ghose, stud.	A serotal tumor removed during a mesmeric trance ...	No case.
1386	10th Sept. 1846 ...	Dr. Jas. Esdaile	Aneurism of the arch of the aorta, (Native,)	A male Hindoo.
1387	12th Sept. 1846 ...	Dr. James Taylor, Dacca	General tubercolosis of the bones of the entire skeleton { from a native of India, subject very much emaciated.	{ Note by Tameez Khan.
1388	3d October 1846 ...	Professor Webb		
1389	12th October 1846	{ Ramnarain Doss, Sub- { Assistant Surgeon ...	{ Urinary calculi successfully extracted from a boy of 4 years old, weight 3 ss. comp. lithate of ammon with phosphate	{ Two cases accompa- nied.

Return of Morbid and other preparations added to the Medical College Museum, during the Years 1846-1847 and 1847-48.—(Continued.)

Museum Number.	Date.	Name of Donors.	Nature of Preparations.	Case sent or not.
1390	12th October 1846	{ Ramnarain Doss, Sub- Assistant Surgeon ...	{ Three calculi extracted successfully from a Hindoo 35 years old, all weighing 3 <i>ij</i> . and gr. 76 comp. lithate of ammonia	Cases forwarded by the Donor.
1391	12th October 1846	{ Ramnarain Doss, Sub- Assistant Surgeon ...	{ A calculus successfully extracted from a boy 12 years old, weighing 3 <i>j</i> . composed of lithate of ammonia and phosphate	
1392	17th October 1846	Dr. Green of Howrah ...	Omentum adherent to the stomach from peritonitis.	Accompanied with case.
1393	17th October 1846	Dr. Green of Howrah ...	The liver affected with cirrosis from peritonitis,	
1394	19th October 1846	Tameez Khan, student ...	{ Uterus and its appendages, in the cavity of the former a large carcinomatous tumor.	
1395	19th October 1846	Tameez Khan, student ...	Aneurism of the arch of aorta.	
1397	28th October 1846	Professor Webb	{ Anchylosis of the dens sapientie with the upper- jaw of the right side.	Case drawn up and sent.
1398	30th October 1846,	Mr. P. A. Minas, student	{ Temporal bone, the cavity of the tympanum, semi- circular canals, cochlea, &c.	
1399	30th October 1846	Ameenooddin, student ...	Temporal bone, the cavity of the tympanum, &c.	
1400	30th October 1846	Mahomed J'aun, student	Rupture of the bladder at the fundus, and thickening	
1402	30th October 1846	Mr. Covington, student	The liver reduced to about half its natural size.	
1403	11th Nov. 1846 ...	Mr. P. A. Minas, student	{ Universal inflammation of the viscera of the chest, both lungs firmly and generally united to costal pleura, pericardiac cavity obliterated.	Case drawn up and sent.
1404	11th Nov. 1846 ...	Mr. P. A. Minas, student	{ The worst effects of universal and uncontrolled as- themic pneumonia.	
1405	12th Nov. 1846 ...	Mr. P. A. Minas, student		

		Mr. P. A. Minas, student	Vessels of testis injected.	Case forwarded.
1406	12th Nov. 1846 ...	Mr. P. A. Minas, student	{ Femoral vessels and their accompanying nerves la-	Case accompanied it.
1407	12th Nov. 1846 ...	Mr. Covington, student ...	{ erated	
1408	20th Nov. 1846 ...	Dr. Green, Howrah	{ Universal adhesion of pericardium to the heart	
1409	21st Nov. 1846 ...	Mr. J. Sheetz	{ Left lung, universally adherent to the costal pleura and	
			{ excavated in all directions by tuberculous ulcerations.	
1410	21st Nov. 1846 ...	Mr. J. Sheetz	{ Shows tuberclosis of the lungs, obliteration of the	
			{ bronchial glands, of the lungs, obliteration of the	
			{ left pulmonary artery from tuberculous matter.	
1411	22d Nov. 1846 ...	Professor Webb	{ Apoplexy of lung (Hindoo.)	
1412	22d Nov. 1846 ...	Professor Webb	{ Hepatization of lung (Hindoo.)	
1413	24th Nov. 1846 ...	Baboo Modoosoodun Gupta	{ Incipient abscess of the liver.	
1414	24th Nov. 1846 ...	Baboo Modoosoodun Gupta	{ Chronic abscess of the brain.	
1416	30th Nov. 1846 ...	Mr. T. Garvin student ...	{ Esophagus—the circular and longitudinal muscular	
			{ fibres dissected.	
1417	4th Dec. 1846 ...	Mr. T. Garvin, student ...	{ Congestion of the vessels of stomach.	
1418	4th Dec. 1846 ..	Mr. Sheetz	{ Inflated stomach, showing muscular fibres.	
1419	4th Dec. 1846 ...	Mr. Sheetz	{ Human urinary bladder, inflated, showing muscular	
			{ fibres.	
1420	4th Dec. 1846 ...	Professor Webb	{ Extensive tuberclosis of lungs.	
1422	5th Dec. 1846 ...	Baboo Modoosoodun Gupta	{ Diseased heart of a native.	
1423	5th Dec. 1846 ...	Tameez Khan, student ...	{ A fine specimen of asthenic pneumonia.	
1424	5th Dec. 1846 ...	Mr. G. Daly	{ A good specimen of tape worm.	
1425	7th Dec. 1846 ...	Tameez Khan, student ...	{ Dried and well injected liver.	
1426	7th Dec. 1846 ...	Tameez Khan, student ...	{ Minutely injected portions of liver.	
1427	7th Dec. 1846 ...	Mr. Covington, student ...	{ Dried larynx and pharynx.	
1429	11th Dec. 1846 ...	Mr. D. Pieahy, student	{ Liver of an anasareous female.	
1430	11th Dec. 1846 ...	Mr. D. Pieahy, student	{ Spleen of an anasareous female.	
1431	11th Dec. 1846 ...	Mohesehunder Dutti,	{ Two urinary calculi.	
1432	11th Dec. 1846 ...	Mr. J. Kearney, student	{ A stone found in the gall bladder of a native.	
1433	14th Dec. 1846 ...	Baboo Modoosoodun Gupta	{ An enlarged stomach.	
1434	14th Dec. 1846 ...	Tameez Khan, student ...	{ Two injected kidneys.	
1435	{ 15th Dec. 1856 ...	Professor Webb	{ Artery showing arteritis.	
1436				

Return of Morbid and other preparations added to the Medical College Museum, during the Years 1846-1847 and 1847-48.—(Continued.)

Museum Number.	Date.	Name of Donors.	Nature of Preparations.	Case sent or not.
1437	16th Dec. 1846 ..	Mr. J. Pitt, student	{ A liver with part of transverse colon and right kidney attached.	
1438	17th Dec. 1846 ..	Dr. Green, of Howah ..	{ Lungs and heart, from a phisical native patient of the Howrah Hospital.	
1439	17th Dec. 1846 ..	Professor Webb	{ Specimen of a tuberculous lung, from a native of Bengal.	
1440	19th Dec. 1846 ..	Tameez Khan, student ..	{ Inflated stomach, showing the arteries.	
1441	19th Dec. 1846 ..	Mr. J. Sheetz	{ Inflated stomach, showing the arteries.	
1442	19th Dec. 1846 ..	Mr. J. Sheetz	{ Inflated cecum.	
1443	19th Dec. 1846 ..	Mr. J. Sheetz	{ Small intestines, showing the valvulae conniventes.	
1444	20th Dec. 1846 ..	Dr. McPherson	{ Specimen of diseased liver.	
1445	20th Dec. 1846 ..	Dr. Mouat, of Madras ..	{ Fractured skull of private McDougal of H. M. 15th Hussars.	
1446	20th Dec. 1846 ..	Dr. Mouat, of Madras ..	{ A bony deposit embedded in the liver.	
1447	20th Dec. 1846 ..	Dr. Mouat, of Madras ..	{ Aneurismal sac of abdominal aorta.	
1448	22nd Dec. 1846 ..	Tameez Khan, student ..	{ Two testes, showing the natural injection of the tunica vasculosa.	
1449	22nd Dec. 1846 ..	Tameez Khan, student ..	{ Two testes, showing the vessels of the cord.	
1450	22nd Dec. 1846 ..	Tameez Khan, student ..	{ Two testes, to show their internal structure.	
1451	22nd Dec. 1846 ..	Tameez Khan, student ..	{ Pelvis of a young child, to show the hymen.	
1452	22nd Dec. 1846 ..	Tameez Khan, student ..	{ Part of penis, showing the septum pectiniforme.	
1453	2nd January, 1847	Prenanath Roy, student ..	{ Dried preparation showing course of brachial artery.	

1454	2nd January 1847	Mahomed Jan, student ...	} Fore-arm and hand to show the peculiar phalanges of a woman brought into the dissecting room ... } Fore-arm and hand to show the peculiar phalanges of a woman brought into the dissecting room ... } Preparation to show the vascular structure of liver. The superior extremity to show the arteries. } Dried preparation to show the muscular structure of pharynx. } Dried preparation the anatomy of the perinæum, bladder and rectum. } Dried preparation of hand showing the muscles. } Dried preparation of small intestines. } Fractured skull of a native of Bengal, a female. To show vessels of skull, dried preparation. } Dried preparation of the arteries of the spleen. } Dried preparation to show the elevators and depressors of larynx. } Dried preparation to show the anatomy of the larynx. } Dried preparation showing the museles of part of superior extremity. } Dislocation of femur on the dorsum ili. } Fore-arm and hand mortified. } Inferior extremity of humerus mortified. } Dried preparation to show the anatomy of bladder. } Heart of Giraffe. } Heart of a turtle. } Hymen taken from an infant of only two months. The museles and arteries of hip and thigh. } A small heart to show the coronary veins, Stuffed cyrus. } Gizzard of the cyrus containing pebbles.
1455	2nd January 1847	Ameen-ood deen, student	
1456	4th January 1847	Tameez Khan, student ...	
1457	4th January 1847	Mr. Covington, student ...	
1458	4th January 1847	Professor Webb	
1459	4th January 1847	Mr. Covington, student ...	
1460	4th January 1847	Mr. Covington, student ...	
1461	4th January 1847	{ Professor Webb	
1462	5th January 1847	Unknown	
1463	5th January 1847	Tameez Khan, student ...	
1464	5th January 1847	Tameez Khan, student ...	}
1465	5th January 1847	{ Jadub Chunder Ghose, student	
1466	6th January 1847	{ Jadub Chunder Ghose, student	
1467	7th January 1847	{ Jadub Chunder Ghose, student	
1468	8th January 1847	{ Jadub Chunder Ghose, student	
1469	11th January 1847	Prof. R. O'Shaughnessy	
1470	12th January 1847	Prof. R. O'Shaughnessy	
1471	13th January 1847	Prof. R. O'Shaughnessy	
1472	14th January 1847	By the Pundit	
1473	15th January 1847	{ Asiatic Museum through Dr. Mouat	
1475	18th January 1847	Professor Webb	}
1477	1st Feb. 1847	Tameez Khan, student ...	
1478	1st Feb. 1847	Tameez Khan, student ...	
1479	1st Feb. 1847	Coneylall Sen, student ...	
1480	1st Feb. 1847	Dr. F. J. Mouat,	
1481	1st Feb. 1847	Dr. F. J. Mouat,	

Refer to No. 1437.

Return of Morbid and other preparations added to the Medical College Museum, during the Years 1846-1847 and 1847-48.—(Continued.)

Museum Number.	Date.	Name of Donors.	Nature of Preparations.	Case sent or not.
1483	4th Feb. 1847	Tameez Khan student.....	Dried preparation to show pelvis.	
1484	5th Feb. 1847	Tameez Khan student.....	{ Lungs and heart of fœtus, to show the course of the circulation.	
1486	5th Feb. 1847	Mr. Covington student ..	The muscles of inferior extremity.	
1487	5th Feb. 1847 ... }	Sub-Assist. Surg. Mohes Chunder Nun, of Nuttra,	{ Forty-six urinary calculi, contained in a glass case.	
1488	6th Feb. 1847	Mr. Covington student ...	The muscles and arteries of the superior extremity.	
1489	8th Feb. 1847	College Hospital,	Aneurism of the arch of the aorta of an European...	Case.
1490	9th Feb. 1847	{ Jadub Chunder Ghose, student	The uterus during the sixth month of pregnancy.	
1491	9th Feb. 1847 }	{ Jadub Chunder Ghose student	{ Uterus of a Mahomedan woman, supposed to be a case of criminal abortion.	
1492	15th Feb. 1847 ... }	Kedernauth Day student ..	Dried preparation to show the arteries of the neck.	
1493	15th Feb. 1847 ... }	Tameez Khan student.....	Dried preparation showing the vessels of duramater.	
1494	15th March 1847	Baboo Dwarkanauth Bose,	{ A case of abortion produced by introducing a stick which by irritation produced peritonitis & death.....	{ Case.
1495	20th Feb. 1847 ... }	Dr. F. J. Mouat	A bird.	
1496	20th Feb. 1847 ... }	Dr. F. J. Mouat	{ Species not yet determined.	
1497	20th Feb. 1847 ... }	Dr. F. J. Mouat	A bird.	
1498	20th Feb. 1847 ... }	Dr. F. J. Mouat	A fish.	
1499	20th March 1847	Mr. J. Hinder	A hammer-headed shark.	
1500	23rd March 1847	Mr. Covington	Dried preparation to show the iliac artiries.	
1501	23rd March 1847	.....	{ Head and neck of a young child, to show the muscles of the neck.	

1502	23d	March 1847	Tameez Khan, student ...	{ Dried preparation to show the internal earotid and its branches.
1503	23d	March 1847	Tameez Khan, student ...	{ Dried preparation, to show the superficial vertebral veins.
1504	23d	March 1847	Tameez Khan, student ...	{ Dried preparation, showing a elub foot.
1505	23d	March 1847	Tameez Khan, student ...	{ Dried preparation, showing fracture of the neck of the femur.
1506	4th	May 1847	Tameez Khan, student ...	{ Emphysema of a child's lung with inflammation of heart and lungs.
1508	4th	May 1847	Tameez Khan, student ...	{ Course of internal mammary arteries.
1509	4th	May 1847	Dr. Webb,	{ Several specimens of emphysematous lung.
1510	5th	May 1847	Professor Webb	{ Lungs and heart, taken from a Hindoo girl—the lungs exhibit a fine specimen of pleuro-pneumonia.
1511	5th	May 1847	Professor Webb	{ Fine specimen of pleuro-pneumonia.
1512	15th	January 1847	E. Blyth, Esq.....	{ Bifurcation of trachea into bronchi, of a Giraffe which died through food passing into the lungs.
1513	15th	January 1847	E. Blyth, Esq.....	{ Trachea of a Giraffe.
1514	15th	January 1847	E. Blyth, Esq.....	{ Hypertrophied kidney.
1515	20th	February 1847	Dr. McPherson	{ Hypertrophied spleen.
1516	20th	February 1847	Dr. McPherson	{ Lung, showing a fine specimen of pneumonia.
1517	6th	May 1847 ...	Professor Webb	{ Diseased eye, affected with melanosis.
1518	20th	April 1847 ...	Prof. O'Shaughnessy ...	{ A fibro cartilaginous tumour extirpated from the eye.
1519	20th	April 1847 ...	Prof. O'Shaughnessy	{ A large ulcer growing upon the thumb of a Native.
1520	22d	April 1847 ...	Prof. O'Shaughnessy	{ Two tumours growing upon the pinna of the ear.
1521	25th	April 1847 ...	Dr. Esdaile	{ Urinary calculus.
1522	25th	April 1847 ...	Dr. Esdaile	{ Inflammation of the spleen propagated through the diaphragm to the base of the left lung.
1523	25th	April 1847 ...	Professor Webb	{ Heart affected with small pox.
1524	13th	May 1847 ...	Mr. Lofus	{ Liver, right lobe, studded with small abscesses.
1525	13th	May 1847 ...	Dr. J. Mouat, Madras ...	{ Shows aneurism of the arch of aorta.
1526	13th	May 1847 ...	Dr. J. Mouat, Madras ...	{ Index finger of a man who was bitten by a horse.

Return of Morbid and other preparations added to the Medical College Museum, during the Years 1846-1847 and 1847-48.—(Continued.)

Museum Number.	Date.	Name of Donors.	Nature of Preparations.	Case sent or not.
1528	19th May 1847	Professor Webb	Sections of a liver of a Hindoo brought to the dissecting room affected with cellular disease. Atrophy of heart, lungs, and liver. Liver, shewing the presence of two abscesses. Shows atrophy of the left lobe of the liver. Abscess of the right lobe of liver bursting into the transverse arch of colon. Shows scirrhus of liver.	
1529	19th May 1847	Professor Webb		
1530	19th May 1847	Professor Webb		
1532	19th May 1847	Professor Webb		
1533	19th May 1847	Professor Webb		
1534	19th May 1847	Professor Webb	Liver, showing the effects of abscesses. Liver, adhering to the spleen (from Aden.) Diffused abscess in liver. Apoplexy of the lung. Dried preparation, showing the tracheæ of the alligator. Preparation, to show the coats of an artery, the aorta of the giraffe. A thigh, amputated from a Hindoo boy. A caso of stono in the bladder. Several species of small fishes from the Sand Heads..... A fish with its ova.	
1535	19th May 1847	Professor Webb		
1536	19th May 1847	Professor Webb		
1537	19th May 1847	Professor Webb		
1538	26th May 1847	Professor Webb		
1539	26th May 1847	Dr. J. Mouat, Madras	Dried preparation, showing the tracheæ of the alligator. Preparation, to show the coats of an artery, the aorta of the giraffe. A thigh, amputated from a Hindoo boy. A caso of stono in the bladder. Several species of small fishes from the Sand Heads..... A fish with its ova.	
1540	26th May 1847	Professor Webb		
1412	26th May 1847	Professor Webb		
1542	26th May 1847	Professor Webb		
1543	26th May 1847	Professor Webb		
1544	28th May 1847	Professor O'Shaughnessy	Dried preparation, showing the tracheæ of the alligator. Preparation, to show the coats of an artery, the aorta of the giraffe. A thigh, amputated from a Hindoo boy. A caso of stono in the bladder. Several species of small fishes from the Sand Heads..... A fish with its ova.	
1545	28th May 1847	Professor O'Shaughnessy		
1546	28th May 1847	Mr. J. Hinder, student,		
1548	1st June 1847	Mr. Thomas, student,		See file No. 1545.

1549	5th June 1847 ...	Taboo Dwarkanauth Bose	Heart and lungs of a dog, (diseased.)
1550	5th June 1847 ...	Professor Webb	Genital organs, with part of intestines, from a Hindoo, affected with peritonitis.
1551	5th June 1847 ...	Tameez Khan, student	Heart and lungs of a native female, (diseased.)
1552	5th June 1847 ...	Tameez Khan, student	Liver of the same native female, (diseased.)
1553	5th June 1847 ...	Tameez Khan, student	Intestines of the same native female, (diseased.)
1554	5th June 1847 ...	Dr. Bedford	A double fetus, from Obittagong.
1555	5th June 1847 ...	Professor O'Shaughnessy.	Superior extremity removed from a Native.
1556	7th June 1847 ...	Dr. Stewart	A fetus of about eleven weeks.
1557	8th June 1847 ...	Professor Webb	Cancer in the stomach of an Australian horse.
1558	8th June 1847 ...	Professor Webb	Spleen of a child, diseased.
1559	8th June 1847 ...	Dr. J. Mouat, of Madras	Showing danson colored patebes in the colon.
1560	8th June 1847 ...	Mr. G. Daly	Skin of an European sailor.
1561	8th June 1847 ...	Professor Webb	Shows tuberculosis of lungs.
1562	8th June 1847 ..	Professor Webb	Peritonitis, hepatitis and enteritis, in a young child.
1563	8th June 1847 ...	Professor Webb	Shows gangrene of lung.
1564	8th June 1847 ...	Professor O'Shaughnessy.	Is a fine specimen of extensive disease both in the kidneys and bladder.
1566	8th June 1847 ...	Tameez Khan, student	Is a fine specimen of medullary, sarcoma of the ovaries.
1567	8th June 1847 ..	Professor Webb	Inflammation of glottis and trachea.
1568	23th June 1847 ...	Mr. J. Sheetz	Fatty tumour in the uterus of a native female, brought into the dissecting rooms.
1569	1st July 1847 ...	Tameez Khan, student	A female pelvis, showing the relative anatomy of the formative organs of generation.
1570	3d July 1847 ...	Professor O'Shaughnessy.	Dried skull of a Hindoo, a native of Bengal, exhibiting extensive fraetures
1571	16th July 1847 ...	Mr. P. A. Minas, student	Aorta with ulceration and atheromatous and fibrinous deposits a Native.
1572	16th July 1847 ...	Mr. P. A. Minas, student	Lung of the same subject, one lung completely hepatised.
1573	16th July 1847 ...	Ameed ood-deen, student	Palate bone attached.
1574	16th July 1847 ...	Ameed ood-deen, student	Another palate bone unattached.

Return of Morbid and other preparations added to the Medical College Museum, during the Years 1846-1847 and 1847-48.—(Continued.)

Museum Number.	Date.	Name of Donors.	Nature of Preparations.	Case sent or not.
1575	25th July 1847 ..	Tameez Khan, student ...	Testicle (human.)	<div> <div>Received Case 5th August 1847.</div> <div>Case.</div> <div>No case received.</div> </div>
1576	25th July 1847 ..	Tameez Khan, student ...	Testicle (human.)	
1577	2d August 1847 ..	Mr. G. Daly	A portion of the mucous membrane of the large intestine sloughed away and passed by a stool.	
1578	2d August 1847...	Mr. P. A. Minas, student	A piece of intestine (large) of an European seaman who died of dysentery, the pustular form of ulceration,	
1579	7th August 1847 ..	Mr. A. Thomas, student	The heart of a native of Bengal, presents three distinct wounds caused by a buggy-wheel.	
1580	12th August 1847 ..	Mr. G. Naylor	Three specimens of Guinea worm, extracted from the foot of a native of Bengal, by the donor.	
1581	13th August 1847 ..	Mr. G. Daly	A fine specimen of anchylosis of the elbow.	
1582	16th August 1847 ..	Buxy Ram, student	A cancerous tumour.	
1583	18th August 1847 ..	Mr. Roosmalcecoq, student	A liver (human.)	
1600	18th Sept. 1847 ...	Professor Stewart	HEART AND BLOOD VESSELS. A heart, showing granular deposition in the tricuspid, mitral, pulmonic and aortic valves.	
1610	7th Oct. 1847	Professor Webb	A heart, two instead of three valves at the root of the pulmonary artery, (Native.)	Shows a lung minutely injected with size and vermillion.
1612	11th Oct. 1847 ...	Ameenooddeen, student...	A heart, showing the muscular fibres.	
1614	.....	.....	Shows a lung minutely injected with size and vermillion.

1630	.....	.....	Shows larynx and trachæa (two) one having the tongue attached showing the papillæ of the tongue and the muscles of the larynx, the other without the tongue shows the earlilages of the larynx and trachea, and their ligaments, together with thyro-byoid and thyro-eroid membranes.
1641	5th November 1847	Baboo Dwarkanauth Bose	The heart, of a native, a beautiful instance of endo-pericarditis.
1643	6th November 1847	Baboo Dwarkanauth Bose	Part of the aorta, showing the effects of ulcerative inflammation.
1646	.....	Baboo D. D. Bose	A fetus showing the lobulated state of the kidneys, acini of the liver, the thymus gland. The viscera both of the thorax, and abdomen are in their places. The placenta is seen to be attached to the umbilicus, the brain and spinal cord is laid open.
1649	19th Nov. 1847 ...	Dr. Bond, of Burdwan ...	A preparation showing the heart very greatly altered from its natural figure.
1660	29th Nov. 1847 ...	Dr. W. H. B. Ross	The heart of a Native prisoner, spontaneous rupture of the right ventricle longitudinally from earidæ aneurism
1661	6th December 1847	Dr. W. H. B. Ross	A fatty heart.
1662	6th December 1847	Mr. Picaehy	A heart and its pericardium (inflammation)
1667	9th Dec. 1847.....	From Singapore	A fine specimen of aneurism of the thoracic aorta ...
1677	22d Dec. 1847.....	Mr. F. J. Petingall, { student	Diseased heart and aorta from a native, coronary arteries ossified
1681	.....	Baboo D. D. Bose	Shows the aorta ascending, arch, and descending. The branches from the arch, and coronary arteries, and also few branches from the abdominal aorta.
1683	.....	Baboo D. D. Bose	Shows abdominal aorta and its branches, superior mesenteric artery, and portal veins in the intestines.
1693	13th January 1848	Nobo Gopal Ghosaul, stud.	Heart, showing signs of inflammation and albuminous disposition
1691	13th January 1848	Dr. Clark, of Dum Dum	Diseased heart and pericardium deposition of lymph nearly $\frac{1}{4}$ of an inch in thickness

} Case No. 1660.

} Vide No. 1663 & 1664.

} Case No. 1667.

} No 1677.

} Case by Dr. Clarke,
} No. 1692, for the lung.
} No. 1694, liver of the
} same.

Return of Morbid and other preparations added to the Medical College Museum, during the Years 1846-47, and 1847-48.

Museum Number.	Date.	Name of Donors.	Heart and Vessels.	Case sent or not.
1697	19th January 1848	Dr. Scanlan, Backergunge	Show endo-pericarditis consequent upon a wound, ...	No. 1697.
1698	21st January 1848	Pundit Modusudun Gupto	Hyperthrophy of the left ventricle with ossification, a native.	
1588	27th August 1847	Mr. Kearney, Assistant Curator	Left lung, the lower half filled with tubercles, the upper entirely devoid of any.....	
1606	28th Sept. 1847 ...	Govind Chunder Dutt ...	Lungs, from a native laboring under chronic bronchitis. (Cancelled.).....	Case.
1611	11th October 1847	Mr. A. Thomas, student..	A preparation to show the relations of the earotid vessels to the air passages.	Case.
1621	20th October 1847	Professor Webb	A preparation to show the effects of empyema, gangrene of the left pleura and transposition of the heart, from a native patient	} Case, Mr. A. Thomas.
1622	20th October 1847	Mr. A. Thomas	Empyema of the chest, displacement of heart, endo-pericarditis, aortitis, atrophy of the left lung	
1647	12th Nov. 1847 ...	Dr. Bond, of Burdwan {	A preparation showing gangrene of the trachea.	
1655	24th Nov. 1847 ...	Mr. E. Loftus, student...	A portion of lung studded with tubercles	Case sent.
1688	11th January 1848	Dr. W. H. B. Ross, Civil Assistant Surgeon, Jessore.	A tuberculous lung of a soldier	Case 1688.
1692	13th January 1848	Dr. Clark of Dum-Dum	A portion of hepatisized lung, taken from a native of India.	No. 1691 and 1692.
1717	4th February 1848	Dr. Shaw of Agra	A spleniform substance found attached to the lung...	
1718	4th February 1848	Dr. Shaw of Agra		Vide File No. 1719.

1583	18th August 1847	Mr. Roosmalecocq, student	Liver, two large abscesses were found (Cancelled.)	Case received.
1591	15th Sept. 1847 ...	Donor not known		
1607	1st October 1847 ...	Mr. E. Loftus, student	Liver with an adherent stomach.....	Case.
1608	5th October 1847 ...	Mr. E. Loftus, student	Liver, a large abscess lower part.	
1623	25th October 1847	Mr. A. Thomas	Abscess of the liver opening through the diaphragm.	Vide case, No. 1623.
1636	3rd Nov. 1847	Professor A. Webb,	A gangrenous liver.	
1639	4th Nov. 1847	Baboo Madoosuden Goop- to,		
1640	5th Nov. 1847	Professor A. Webb,	A liver, abscess opened into the lungs.	
1648	29th Nov. 1847 ...	Dr. W. H. B. Ross.....	A gangrenous liver.	
1675	16th Dec. 1847 ...	Mr. F. J. Pettingall, stu- dent,	Nutmeg liver from native female.	
			Three biliary calculi.	
			ALIMENTARY CANAL.	
1584	18th August 1847	Mr. Roosmalecocq	Cæcum, colon, sigmoid flexure of an European,	Case.
1589	27th Sept. 1847 ...	Professor Webb	Small intestines from a boy who died of typhus fever	No. 1589.
1605	28th Sept. 1847 ...	Mr. Roosmalecocq Clini- cal Clerk	Large intestines, taken from a case of scorbutic dys- entery	Case.
1607	1st October 1847	Mr. E. Loftus, student	Intestines taken from an European sailor, died of cholera	Case received, No. 1607.
1619	15th October 1847	J. Bowhill, Esq., Assist. Surgeon, Bheel Corps	Colon, cæcum, and ilium (dysentery)	Case received.
1720	4th February 1848	Dr. Shaw, of Agra.....	Ulcerated portion of the arch of the colon	Vide case No. 1720.
1721	4th February 1848	Dr. Shaw, of Agra.....	A portion of colon, mucous coat inverted, showing beautifully the ulcerative process	Vide case No. 1721.
1722	4th February 1848	Dr. Shaw, of Agra.....	Ulcerated cæcum, the coats perforated by an ulcer ...	Case No. 1722.
1723	4th February 1848	Dr. Shaw, of Agra.....	Shows gangrene of the arch of the colon.....	Case No. 1723.
1724	4th February 1848	Dr. Shaw, of Agra.....	A portion of colon and cæcum much thickened ulcerated	Case No. 1724, No. 1616.
1617	13th October 1847	Professor O'Sbaughnessy	A preparation showing hernia,	
1637	3d Nov. 1847 ...	A Reed, Esq.	A piece of wood, taken out from the rectum of a na- tive of Delhi, (thickness of man's wrist)	Vide case No. 1637.

Return of Morbid and other preparations added to the Medical College Museum, during the Years 1846-1847 and 1847-48.—(Continued.)

Museum Number.	Date.	Name of Donors.	Alimentary Canal.	Case sent or not.
1645	10th Nov. 1847 ...	T. Blyth, Esq., Asiatic Society	Stomach and intestines of an ostrich.	Case No. 1668.
1664	6th Dec. 1847 ...	Mr. Pieachy,	Portions of the ilium, showing a sloughing state.	
1668	9th Dec. 1847 ...	Dr. Oxley, of Singapore	Shows perforating ulcers of the small intestines supposed to be caused by worms	
1669	9th Dec. 1847 ...	Dr. Oxley, of Singapore	Shows wound of the mesentery from the same subject.	
1656	25th Nov. 1847 ...	Mr. F. J. Pettingal, student,	Preparation of disease of the bladder and urethra.	
1665	7th Dec. 1847 ...	Baboo Madoosuden Goopto	Two kidneys united into one.	Case No. 1670.
1670	9th Dec. 1847 ...	Dr. Oxley, of Singapore	Transfixing wound of the left kidney	
1673	14th Dec. 1847 ...	Baboo Mohes Chunder Naun	Five urinary calculi with the ease.	
1625	28th October 1847	Mr. A. Thomas	Dried bone of the skull of an European, who died from concussion,.....	Case. Case.
1626	28th October 1847	Mr. A. Thomas	Dried skull from a native patient (concussion)	
1629	28th October 1847	Dr. Wise, Civil Surgeon, Dacca	Caries of the lower jaw.	
1657	27th Nov. 1847 ...	Dr. Palmer	A specimen of cancerum oris from an old native man.	
1671	10th Dec. 1847 ...	Professor O'Shaughnessy	A fine specimen of exostosis of the upper jaw.	
1672	13th Dec. 1847 ...	Mons. Montaro	Ossified union of the 2d and 3d cervical vertebrae.	
1709	25th January 1848	Professor Webb	Connexion of the carotid with an abscess in the tonsil.	
1590	7th Sept. 1847 ...	Baboo Dwarkanath Bose	Abscesses on the lumbar region.	

1613	11th October 1847	Dr. MacPherson.....	A diseased Sternum.
1682	5th January 1848	Mr. G. Daly, student.....	Fracture of the whole of the ribs of one side.
GENITAL AND URINARY.			
1585	24th August 1847	Professor O'Shaughnessy	A vesical calculus.
1586	24th August 1847	Professor O'Shaughnessy	A vesical calculus.
1587	24th August 1847	Professor O'Shaughnessy	A vesical calculus.
1597	28th Sept. 1847 ..	By Rannarain Doss, Sub-Assistant Surgeon	An urinary calculus.
1598	28th Sept. 1847 ..	By Rannarain Doss, Sub-Assistant Surgeon	Two vesical calculi.
1592	7th Sept. 1847 ...	Mr. J. Ellis	Warty excrescences, from the perinæum of a native.
1599	9th Sept. 1847 ...	Govind Chunder Dutt ...	Cancer of penis
1601	18th Sept. 1847 ...	Professor O'Shaughnessy	A vesical calculus.
1601	18th Sept. 1847 ...	Professor O'Shaughnessy	A piece of bladder found adherent to the above.
1627	28th October 1847	Dr. Wise, Civil Surgeon of Dacca	Urethral and vesical calculi
1673	14th Dec. 1847 ...	Sub-Assistant Surgeon, Mohes Chunder Naun... ..	Five urinary calculi with cases.
1676	22d Dec. 1847	Mr. G. Daly, House Surg.	Hypertrophied prepuce and scrotum of native.
1696	17th January 1848	S. C. Bysack, student.....	A specimen of calculus vesicæ.....
UPPER EXTREMITY.			
1593	7th Sept. 1847 ...	Fuker Chunder Bose, student	{ Dracunculus taken from the right fore-arm of a Mahomedan.
1596	7th Sept. 1847 ...	Mr. G. Daly	Bones of the hand and some of phalanges of the toes anchylosed, taken from a Hindoo fukeer.
1628	28th October 1847	Dr. Wise, Civil Surgeon of Dacca.....	Tumours, 5 in number, from various parts of the body.
1654	24th Nov. 1847 ...	Prof. O'Shaughnessy	A specimen of exostosis of the elbow joint.
1725	5th Feb. 1848 ...	Prof. O'Shaughnessy	Sequestra taken from the humerus.
1602	24th Sept. 1847 ...	Ameenooddeen, Student.	A preparation to show fracture of the neck of the femur external to the capsule, and the formation of a false joint.

Vide case No. 1627.

Case.

Case.

*Return of Morbid and other preparations added to the Medical College Museum, during the
Years 1846-1847 and 1847-48.—(Continued.)*

Museum Number.	Date.	Name of Donors.	Nature of Preparations.	Case sent or not.
1658	29th Nov. 1847 ...	Dr. W. H. B. Ross, Civil Assistant Surgeon of Jessore	<p>LOWER EXTREMITY.</p> <p>A small adipose tumour removed from the left popliteal space.....</p> <p>Diseased knee and ankle joints.</p> <p>A guinea-worm from the leg of a male prisoner,.....</p> <p>A dried skull to show the digital fossa.</p> <p>PREPARED SKULLS.</p> <p>A skull showing the veins of diploë.</p> <p>A skull showing the veins of the diploë.</p> <p>Dried preparations of all the bones of the skull.</p> <p>Dried preparations of all the bones of the skull, (ethmoid deficient.)</p>	Case.
1680	3d January 1848	Professor Webb		
1718	4th February 1848	Dr. Shaw of Agra.....		
1609	5th October 1847	J. Kearney		
1651	20th Nov. 1847 ...	M. Montaro.....	<p>PREPARED SKULLS.</p> <p>A skull showing the veins of diploë.</p> <p>A skull showing the veins of the diploë.</p> <p>Dried preparations of all the bones of the skull.</p> <p>Dried preparations of all the bones of the skull, (ethmoid deficient.)</p>	Vide File No. 1718.
1652	20th Nov. 1847 ...	M. Montaro.....		
1695	15th January 1848	M. Montaro.....		
1700	21st January 1848	M. Montaro.....		

Return of Morbid and other preparations added to the Medical College Museum, during the year 1846 and 1847—1847-48.

Museum Number.	Anatomical preparations dissected and described by Baboo Dwarikanath Das Basu, Assistant Demonstrator.
	EAR.
1727	Shows the tympanum with tensor tympani muscle, stapedius muscle, mastoidal cells.
1728	Shows laxator tympani muscle attached to the malleus, and chorda tympani nerve crossing the bone, also laxator tymp. minor muscle, stapedius muscle exposed, attached to stapes, which fills oval foramen, round foramen is seen.
1729	Shows the tympanum, and position of the malleus and incus.
1730	Shows the muscles of the pinna of the ear, tympanum with an oval opening in the centre, and the arrangement of the malleus and incus.
1731	Shows the tympanum, disposition, of the ossicula auditus, tensor tymp. laxat tymp minor, tendon stapedius muscle, Eustachian tube, mastoid cells, Jacobson's nerves.
1732	Shows tymp. to which malleus is attached, chorda tymp. nerve crossing the malleus, and laxator tymp. muscle attached to the malleus.
1733	Shows the tymp. very much protruding inwards. where malleus is attached, tensor tymp. muscle, incus and Eustachian tube.
1734	Shows the Estachian tube, and the canal of the meatus auditorius externus, the memb, tymp. modiolus and spiral lamina, and the openings of the semi-circular canals.
1735	Shows tymp ossicula auditus, part of the portio dura nerve.
1736	Shows an injected kidney both veins and arteries.
1737	Shows the tymp, ossicula auditus, tensor tymp muscle and laxator tymp, muscle, carotid artery in its course, portio dura its genu, Eustachian tube.
	BLOOD VESSELS.
1706	Shows part of the arch of the aorta and its branches, and the vertebral arteries of both sides, their curvatures and their entrance within the cavity of the skull.
1710	Shows the injected heart and lungs, the venæ innominatæ, superior cava, pulmonary artery, aorta and its branches ; larynx trachea and bronchia, and the relative position of these parts at the root of the lungs; and also opening of the vena azygos in the sup. vena cava.
1713	Shows the common carotid artery, its division into external and internal carotids, the branches of the external; branches of the internal maxillary, also the course of the internal carotid artery.
1714	Shows the right common carotid, with the external and internal carotid, branches of the internal maxillary and ophthalmic arteries.
1715	Shows the common carotid artery and its bifurcation, branches of the external carotid, sigmoid flexure of the internal carotid in the cavernous groove, also a few branches of the internal maxillary.
1738	An injected preparation of the sinuses of head.
1739	An injected preparation of the sinuses of the head.
1740	A preparation showing the heart and the vessels proceeding thence ; to the carotids, subclavians, even to the bifurcation of the abdominal aorta. An abnormal branch is seen, the middle thyroid artery, and these five thyroid arteries are seen inosculating on the thyroid body.
1741	An injected body which shows both the veins and arteries of the upper extremity, as well as those of the neck, superficial and deep veins are injected, showing also the termination of the vena azygos major, into the vena cava superior.

Museum Number.	Anatomical preparations dissected and described by Baboo Dwarikananth Das Basu, Assistant Demonstrator, 1847.
1742	Shows the veins of the lower extremity lumbar, renal, &c.
	TISSUES.
1743	Shows fibro cartilage.
1744	Yellow fibrous tissuc.
1745	Contractile tissue from the dartos.
1746	Areolar or cellular tissue.
1747	Adipose or fatty tissue.
1748	Cartilage from the ribs.
1749	White fibrous tissuc.
1750	Muscular tissue of the voluntary kind.
1751	Shows the ligaments of the elbow, external and internal lateral, posterior, oblique, orbicular, and also the interosseous ligaments.
1752	Shows kidneys minutely injected with size and vermilion.
1753	Shows liver minutely injected with size.
1754	Shows the brain covered superiorly by its membranes inferiorly the vessels are exposed which are minutely injected.
1755	A bit of skin minutely injected with size.
1756	A lung minutely injected with size.——
1757	One large human stomach, the coats of which are very thin.
1758	Shows a stomach which has an hour-glass contraction and the paretics and are much thickened.
1759	Shows the branches of the axillary, and brachial arteries, high division of the brachial, and the superficial character of the ulnar artery, superficial palmar arch is only partially injected. The deep arch is well seen.
	JOINTS.
1760	Knee joint showing the two external and an internal lateral ligaments, ligamentum patellæ, posterior ligament, and ligament of Winslow, anterior and posterior tibio-fibular ligaments and interosseous ligament or membrane.
1761	Knee joint, showing ligamentum patellæ, internal and external lateral ligaments, anterior crucial ligament, semilunar cartilages, portions of coronary lig, posterior or Winslow's lig.
1762	Shoulder joint showing the capsular ligament and coraco-humeral lig, long tendon of biceps coming out of the capsular lig, superior and inferior acromio-clavicular lig. coraco-clavicular-lig (conoid and trapezoid) coraco-acromial and transverse ligaments.
1763	Acromio-clavicular joint, sup. and inf. acromio-clavicular lig, corneo,—clavicular lig. consisting of conoid and trapezoid lig, glenoid lig-around glenoid cavity.
1764	Vertebral articulation, their bodies, anterior and posterior common lig, and intervertebral substance, consisting of pulpy matter in the centre externally concentric laminae.
1765	Vertebra showing concentric laminae beautifully.
1766	Shows anterior and posterior sterno-clavicular lig., inter. clavicular lig., costo-clavicular or rhomboid, inter. articular fibro-cartilage. Also anterior and posterior sup. and inf. sterno-costal, anterior and posterior sternal lig. and costo-xiphoid lig., inter-costal lig or membrane.

Museum Number.	Anatomical preparations dissected and described by Baboo Dwarikanath Das Basu, Assistant Demonstrator, 1847.
JOINTS.	
1767	Shows the ant. and post. sterno-clavicular lig., inter. clavicular lig. rhomboid lig., ant. and post. sup. and inf. sterno-costal lig., costo-zyphoid. Two synovial cavities at the sterno. clavicular articulation inter. articular fibro-cartilage, inter. costal ligament or membrane.
1768	Shows ant. and post. common lig., costo-vertebral or stellate lig. capsular, inter-articular and two synovial membranes.
1769	Shows lig. subflava, capsular lig., supra. and inter-spinous lig. and also inter-transverse lig., ant. mid. and post. costo-transverse lig.
1770	Show the pulpy substance and concentric laminae of the intervertebral substance.
1771	Shows ant. and post. common lig., inter-vertebral substance, lig. subflava, capsular lig., lumbo-sacral and lumbo-iliae—sacro-iliac ant. and post. oblique, Pouparts, sacro-iliac. lig, sacro-ischiatic ant. and post. interosseous fibro cartilage, part of obturator mem. part of the cotyloid lig. and transverse lig,
1772	Shows ant. common lig., ant., post. and oblique sacro-iliae lig. ant. and post. sacro-ischiatic lig. lumbo-sacral and lumbo-iliae lig., Pouparts lig.—capsular, ilio femoral, transverse, ant. and post. sacro coccygeal inter-articular fibro cartilage.
1773	Shows how the capsular lig. is attached to the neck of the femur.
1801	Shows lumbo-sacral and iliac lig. ant. post. and oblique sacro-iliae lig. ant. and post. common lig., lig. subflava, ant. and post. sacro ischi. lig. Poupart's lig.—capsular and ilio-femoral lig.
1774	Shows ant. post. sup. and sub-pubic lig.
1775	Shows lig. patellae external, internal, lateral and posterior lig., ant. crucial, lig. mucosum, semilunar cartilage, coronary lig., ant. and post. tibio fibular lig. also lig. alaria.
1776	Shows the ant. and post. crucial lig., semilunar cartilages transverse and coronary lig. ant. and post. tibio-fibular lig.
1777	Shows ant. and post. crucial lig., lig. of Winslow, part of the semilunar cartilage and coronary lig,
1778	Shows lig. patellae and mucosum. alar lig. semilunar cartilages, coronary lig., ant. and post. crucial lig., ant. and post. tibio fibular lig. —part of the interosseous lig.,
1779	Shows lig. patellae ant. and post. crucial lig., internal and external lateral lig., ant. and post. tibio-fibular lig.
1780	Shows lig., patellae, lig. mucosa, alar. lig., ant. and part. of post. crucial lig. transverse lig., 2 external and an internal lateral lig., lig. of Winslow, synovial mem. partly torn.
1781	Shows sup. and inf. interosseous mem., ant. and post. and transverse lig. of tibio fibular joint, internal lateral and two insertions of the external lateral lig. Calcaneo-scapoid and long and short calcaneo cuboid lig. Dorsal lig. interosseous lig. between os calcis and astragalus, transverse lig. ant. lateral lig., internal and external, In the phalanges ant. and two lateral lig.
1782	Shows the inf. interosseous lig. ant. and post. tibiofibular lig.—transverse lig. three insertions of the external lateral, and internal lateral lig., ant. lig. dorsal and plantar lig. on the tarsus and metatarsus also tendou of peroneus longus muscle.

Museum Number.	Preparations dissected and described by D. D. Basu, Assistant Demonstrator, 1847.
JOINTS.	
1783	Shows the inferior interosseous lig. ant. and post. tibio fibular lig; —three insertions of the external lateral and internal lateral or deltoid lig., dorsal and plantar lig. of the tarsus;—tendo Achillis. Interosseous lig. calcaneo-astragaloid, and the other four interosseous lig. are seen between scaphoid cuneiform and cuboid bones.
1784	Shows calcaneo astragaloid lig. Scapho-cuboid, two cubo-cuneiform lig., lig. between internal and middle cuneiform bones, and one between scaphoid and internal cuneiform bones and the interosseous lig. between tarsus and meta-tarsus. All these lig. are interosseous.
1785	Shows external and post. cal astragaloid lig. sup. astragalo-scaphoid lig., sup. calcaneo-cuboid lig. and all the tarsal interosseous lig. plantar lig.
1786	Shows the sup. and inf. acromio-clavicular lig. coraco-clavicular lig., consisting of conoid and trapezoid lig. coraco-acromial lig.—transverse lig.—capsular, glenoid, coraco-humeral lig., long tendon of the biceps muscle.
1787	Shows sup. and inf. acromio-clavicular, coraco-clavicular, coraco-acromial and transverse lig. capsular, coraco humeral, and glenoid lig., tendon of biceps.
1788	Shows the transverse, coraco-acromial lig.—inf. acromio-clavicular lig. and inter-articular fibro cartilage, coraco-clavicular; capsular, coraco-humeral and glenoid lig. tendon of biceps muscle, and synovial sac.
1789	Shows the transverse, coraco-acromial, coraco-clavicular, coraco-humeral, inf. acromio-clavicular lig. inter-articular fibro cartilage; capsular and glenoid lig. tendon of biceps (shoulder joint.)
1790	Shows ant. post. internal, and external lateral, orbicular oblique and interosseous lig. (elbow.)
1791	Shows ant. part of post. internal and external lateral—orbicular and interosseous lig. (elbow.)
1792	Shows interosseous lig. ant. and post. radio-ulnar lig., interosseous fibro-cartilage;—ant. internal and external lateral lig. of the wrist, and palmar lig.—interosseous lig. of the carpus.
1793	Shows the interosseous lig.—ant. internal and external lateral of the wrist, digital lig. ant. and two lateral transverse and—capsular lig. for the thumb; palmar and dorsal lig.
1794	Shows ant. post. internal and external lateral lig. of the wrist; ant. annular lig.—palmar and dorsal lig. of the carpus and metacarpus: capsular lig. of the thumb.
1795	Shows the palmar and dorsal lig. of the carpus and metacarpus. The interosseous fibro cartilages of the carpus, dorsal palmar and interosseous lig. of the carpo-meta-carpal articulation, also capsular lig. connecting trapezium with the metacarpal bone of the thumb and ant. annular lig.
1796	Shows two lateral and ant. lig. of the digits; and metacarpo—halangeal articulations.
1797	Shows two ant. and one post occipito atloid, two capsular lig., two alar or odontoid, lig. suspensorium:—ant. post. atlo-axoid, and transverse lig., two capsular inter spinous lig., and lig. subflava.
1798	Shows two ant., two lateral, two capsular, one posterior lig. of the atlo-occipital articulation, ant. and post., two capsular atlo. axoi-

Museum Number.	Preparations dissected and described by D. D. Basu, Assistant Demonstrator 1847.
	lig. and transverse lig. occipito-axoid and two odontoid, crucial lig. Between the vertebræ (their bodies) ant. and post. common, capsular, subflava, inter. and supra-spinous, inter-transverse and inter-articular fibro-cartilage, external and internal lateral and capsular ligs., inter-articular fibro-cartilage of the temporo-maxillary articulation.
1799	Shows the inter-articular fibro-cartilage of the lower jaw and the two synovial cavities.
1800	Shows the capsular ligament of the temporo-maxillary articulation beautifully, as well as the external, lateral ligament of the same joint.
1802	Shows minute vessels, which are distributed around the condyles of the femur.
1804	A portion of the ascending colon inflated. The cellular structure is inflated also, showing the cottony character of the areolar tissue.
1805	A portion of intestine dried and spread out—showing beautifully the minute branches of the superior mesenteric artery. This portion was injected with burnt linseed oil.
Anatomical Preparations described by Pundit Modusuden Gupto, dissected by his class.	
(THE MILITARY 1847.)	
<i>Unusual Distribution.</i>	
1821	The radial artery derived its origin from the inner side of the brachial (Quain's p. 30) three inches below artery of the axilla. It crossed the brachial two inches below its origin. The brachial artery three inches below the bend of the elbow divided into three branches, namely; 1st, the median artery; 2d, the ulnar artery; 3d, inteross. artery. The superficial palmar arch is wanting—dissected by <i>Kurimbux</i> 1st.
<i>Usual Distribution.</i>	
1822	Of the arteries of the fore-arm.
1823	Of the arteries of the upper extremity—dissected by <i>Emad Housen</i> .
1824	Ditto of the palm of the hand—dissected by <i>Emad Housen</i> .
1825	Of the external and internal iliac arteries. The obturator artery derived its origin from the internal epigastric artery—dissected by <i>Mybu Khan</i> .
<i>Unusual.</i>	
1826	Of the veins of the upper extremity—dissected by <i>Mybu Khan</i> .
1827	The muscles of the palm of the hand—dissected by <i>Manglue</i> .
1828	Arteries of the upper extremity.
<i>Unusual.</i>	
1829	Of the arteries of the upper extremity. The superior profunda derived its origin from the axillary artery and it is divided into three branches on the middle of the arms, the 1st, branch is united with the posterior ulnar recurrent; the 2d, with the anterior ulnar recurrent, and the 3d, with the anterior radial recurrent. The anastomosis is absent.

Museum Number.	Anatomical Preparations described by Pundit Modusuden Guptoo, dissected by his class. (The Military 1847.)
	<i>Usual.</i>
1830	Of the external and internal iliae arteries—dissected by <i>Mahomud Jan.</i>
1831	Of the arteries of the inferior extremity—dissected by <i>Mahomud Jan.</i>
1832	Of the arteries of the fore-arm—dissected by <i>Mahomud Jan.</i>
1833	Of the intercostal arteries—dissected by <i>Mahomud Jan.</i>
1834	Of the external, internal and femoral arteries—dissected by <i>Mahomud Jan.</i>
1835	Of the arteries of the palm of the hand—dissected by <i>Mahomud Jan.</i>
1836	Of the arteries of an entire subject except the inferior extremities—dissected by <i>Mahomud Jan.</i>
1837	Arteries of the upper extremity—dissected by <i>Mahomud Jan.</i>
	<i>Usual.</i>
1839	Arteries of the upper extremity—dissected by <i>Rumjan Ali 2d.</i>
1840	Of the axillary artery—dissected by <i>Rumjan Ali 2d.</i>
1841	Of the arteries of the arm—dissected by <i>Rumjan Ali 2d.</i>
1842	Of the arteries of the neck and of the upper extremity—dissected by <i>Abdul Wahub 2d.</i>
1843	Of the arteries of the eye—dissected by <i>Abdul Wahub 2d.</i>
1844	Of the arch of the aorta and its branches—dissected by <i>Abdul Wahub 2d.</i>
	<i>Unusual Distribution.</i>
1838	Of the subclavian artery after passing on the anterior parts of transverse processes of the 7th, 6th, 5th and 4th cervical vertebra entered the vertebral foramina of the 3d, 2d and 1st of the cervical vertebrae—dissected by <i>Mahomud Afser.</i>
	<i>Unusual.</i>
1845	Of the arteries of the leg. The anterior tibial artery is very small. The peroneal artery is larger than the posterior tibial artery. The anterior peroneal artery has given origin to the dorsal and tarsal artery and digital arteries of the great toe—dissected by <i>Abdul Wahub 2d.</i>
1846	Of the arteries of the upper extremity. The inferior profunda is divided into two branches, one is united with the posterior ulnar recurrent, the 2d is united with the anterior radial recurrent, the superficial volar is very large—dissected by <i>Abdul Wahub 2d.</i>
1847	Of the arteries of the inferior extremity—dissected by <i>Shaick Ali.</i>
1848	The anterior tibial artery derived its origin from the popliteal artery in the middle of the popliteal space, the popliteal artery is again divided into posterior tibial and peroneal arteries, the anterior tibial artery immediately perforating the interosseous ligament is divided into two large branches which are distributed to the muscles of the outer side of the leg.
	<i>Usual.</i>
1849	Of the arteries of the pelvis and thigh—dissected by <i>Elahabux 1st.</i>
1850	Of the arteries of the upper extremity—dissected by <i>Rohumut Ali.</i>
1851	Of the arteries of an entire subject—dissected by <i>Foyjula Khan.</i>

Museum Number.	Anatomical Preparations described by Pundit Modusuden Guptoo, dissected by his class. (The Military.) 1847.
	<i>Unusual.</i>
1852	The anterior tibial is very small—dissected by <i>Emdad Housen</i> . The anterior peroneal artery is larger than usual on reference, Quain p. 45, fig. 5—dissected by <i>Mybu Khan</i> .
	The middle thyroid artery derived its origin from the arteria innominata—dissected by <i>Mahomud Ofsen</i> .
1853	Of the arteries of an entire subject—dissected by <i>Mahomud Jan</i> and <i>Mybu Khan</i> .
	<i>Usual.</i>
1854	Of the arteries of the upper extremity—dissected by <i>Meer Hydat Ali</i> .
1855	Of the arteries of the leg, and sole of the foot—dissected by <i>Meer Hydat Ali</i> .
1856	Of the arteries of the foot—dissected by <i>Meer Hydat Ali</i> .
1857	Of the iliaes external, internal, and femoral arteries—dissected by <i>Meer Hydat Ali</i> .
1858	Of the lungs—dissected by <i>Meer Hydat Ali</i> .
	<i>Unusual.</i>
1859	Of the arteries of the upper extremity—dissected by <i>Kurimbux 2nd</i> . The superior profunda and posterior circumflex derived their origin from a common trunk. The inferior profunda is derived from the brachial artery immediately below the former. The infe- rior profunda communicated by the posterior ulnar recurrent and anastomotica magna. The anastomotica is united with a recurrentia branch of the brachial artery.
	<i>Usual.</i>
1860	Of the arteries of the neck—dissected by <i>Kurimbux 2nd</i> .
1861	Of the arteries of the superior extremity—dissected by <i>Kurimbux 2nd</i> .
1862	Of the veins of the superior extremity—dissected by <i>Kurimbux 2nd</i> .
1863	Of the vessels of the liver—dissected by <i>Kurimbux 2nd</i> .
1864	Of the arteries of the inferior extremity, the profunda arose 4 inches below the Poupart's ligament—dissected by <i>Emdad Khan</i> .
1865	Of the spinal column.
1866	Of the arteries of the upper extremity.
1867	Of the arteries of the leg.
1868	Of the arteries of the leg.
	<i>Unusual.</i>
1869	Of the arteries of the forearm—dissected by <i>Roma Khan</i> . The radial, ulnar and inteross derived their origin from the bra- chial artery two inches below the bend of the elbow.
1870	Of the arteries of the axilla.



